THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXXII McALESTER, OKLAHOMA, OCTOBER, 1939 Number 10

Pseudomycotic Leg Ulcers*

J. F. HAMILTON, M.D.†

Instructor In Medicine, University of Tennessee

MEMPHIS, TENNESSEE

A peculiar variety of indolent leg ulcer has held the writer's attention and has been of much interest to him for the past 12 years. In December, 1927[1], a study was made of the ulcers of two patients, the like of which had never been seen before. It later developed that the name of neither the disease nor its etiological agent had ever been put in print. To Castellani goes the credit of naming the disease and its causative micro-organism which was recorded in his case report published in December, 1928[2].

Pseudomycosis is characterized by the formation of more or less superficial ulcers with the constant tendency for the ulcers to become chronic and from which may be isolated micro-organisms resembling the hemolytic streptococcus. Furthermore, the pre-ulcer stage in some patients is accompanied by a systemic reaction with fever and rigors. These systemic reactions are usually associated with the infection when it manifests itself in the form of a diffuse cellulitis. As a rule, however, the disease is manifested by the formation of an ulcer with local pain, swelling, redness, and with very little or no general systemic reaction.

The name "pseudomycosis" given the disease by Castellani[2], implies the presence of a mycotic-like ulcer but never having recovered a yeast or fungus from the ulcers, it can not be classified as a true mycosis. This fact, no doubt, prompted Castellani, whose experience with the disease dated back to 1910 when in Ceylon[3], to give it the name pseudomycosis. Castellani also named the micro-organism so constantly associated with the ulcer, the "micrococcus (streptococcus) myceticus" which is considered to be the causative agent. Lancefield[4], of the Rockefeller Institute, New York, after studying a culture we sent her, classified the micrococcus as a h e m o l y t i c streptococcus belonging to group A, but was unable to classify it as to type in this group.

There is strong reason to believe that the same e n t i t y about which we have written under the caption "pseudomycosis" has been considered under other titles, such as , "lacunar ulcer" by Kilbourne[5], "chronic undermining ulcer" by Meleney[6-7], and Goodman[8] on "chronic streptococcus ulcer of the skin." It is felt that the name pseudomycosis as applied to the indolent leg ulcer previously described[1-2] needs no defense.

A large number of our patients present multiple ulcers with a definite mycotic-like appearance with the bases covered with pale to pink granulations, or greyish-white necrotic material, and thick undermined skin edges with intercommunicating daughter ulcers near the main ulcer and from which, in every case, micrococcus (streptococcus) myceticus is isolated —obtaining many times a pure growth on direct culture[9-10]. There are other ulcers, however, less mycotic in appearance from which the same micro-organism morpho-

*Presented before the General Session, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, Oklahoma, May 3, 1939.

†Dr. Willis C. Campbell Clinic.

logically and biochemically to that found in the undermined ulcers, have been isolated. It is in the discrete smooth edged ulcer which has had various medicaments applied before coming to the clinic that we may fail to find the micrococcus myceticus. But in the actively undermining form, recovery of the micro-organism never has failed if the material for culture is taken from the undermined area. Many cultures, if made from open ulcers, show a mixed bacterial flora. This fact is probably responsible for the term "symbiotic ulcer" as used by some authors.

FIG. I

Mr. B. B. H., No. 29297, age 23, photograph 3-21-32 showing three ulcers which intercommunicate through subcutaneous sinuses. Duration of disease four months.

FIG. II

Mr. B. B. H., No. 29297, age 23, photograph 7-6-32 showing scars five weeks following incision of skin overlying sinuses. Duration of treatment four months. Duration of disease eight months.

There has been no history obtained in any patient of the occurrence of spontaneous multiple ulcers at the onset. The onset is usually quite insidious with local itching or stinging to which the patient pays little attention. But in the following 24 to 48 hours, a small pustule accompanied by local increased skin temperature, swelling, redness or tenderness may be seen. If the pustule is visible, it usually opens itself spontaneously in a short time resulting in a small ulcer and instead of beginning to resolve and heal, after liberating itself of the visible pus, the opposite takes place — namely; the ulcer spreads equally or irregularly in all directions frequently undermining the skin for a variable distance. Once an ulcer is formed and remains open, the discharge is no longer purulent but assumes a serosanguinous character. The skin overlying the subcutaneous sinus is frequently thickened with a rolled edge. At the blind end of the sinus, perhaps an inch or more removed from the main ulcer may appear a daughter ulcer, the first indication of which will be a small tender red spot.

This daughter ulcer reminds one of a perforation made by a shot, as it is so smooth and round. If the ulcer enlarges by an undermining of the skin, its outline will naturally be irregular as the tendency is for the main ulcer and the daughter ulcers to merge together forming one large ulcer. If the main ulcer does not enlarge by the undermining of the skin, its outline is more even, it increases in size much slower, its skin edge less thick, and it presents more of a scooped out appearance. With either of the above forms of the ulcer, they may be multiple on a single limb on admission. They may be several inches apart, suggesting either auto-inoculation, or a lymphatic mode of distribution.

Personal observation is convincing that auto-inoculation can occur from one leg to another by even the apposition of the ulcer against the healthy skin of the uninvolved leg[10]. Auto-inoculation by means of contaminated fingers is highly probable also. One wonders why more auto-inoculation

especially to distant parts of the body does not take place.

The powerful necrotising effect of the infection upon the skin in some patients has been appalling. This has been seen to occur in spite of the application of all forms of treatment. Indeed, it is our opinion that this property of the causative micro-organism together with the sinus producing effect are reasons why treatment is so ineffective and the morbidity rate is so high.

FIG. III

Miss P. B., No. 05753, age 11, photograph 12-13-34. Multiple ulcers with excoriation of surrounding skin. Duration, 24 months.

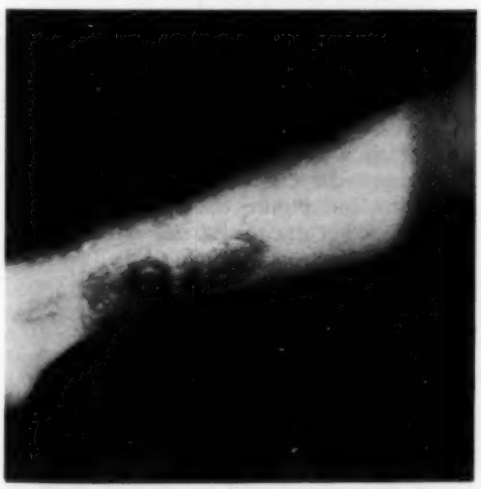

FIG. IV

Miss P. B., No. 05753, age 11, photograph 2-5-35, showing ulcer healed. Duration of treatment seven weeks. Duration of disease about 26 months.

The ulcerations are strikingly unilateral. In an analysis of 44 patients previously reported[9-10], there were only two who had bilateral limb involvement. In only one patient, has an ulcer been seen on the body above the level of the knee. In our series of about 75 patients, only two have had recurrences. In both of these, there were ulcers of both legs at the time of their recurrences, and in one there was an ulcer at the level of the knee of the nearby involved limb and several in the upper third of the thigh. Fifteen to 24 months intervened between these recurrences.

The mode of entrance of the micrococcus myceticus into the body is not known. The history in certain patients would lead one to believe the bacterium is capable of entering through the unbroken skin. However, there is no proof of this actually taking place. The cause of the disease has been attributed to many different and absurd agents such as shoe dye[1], nail puncture[11], and insect bites (mosquito, spider)[9].

Gram's stain of a direct smear of the micrococcus (streptococcus) myceticus is usually gram negative appearing as diplococci and in short chains. Some smears may contain both gram negative and gram positive diplococci. The large number of intracellular gram negative diplococci and their arrangement within the pus cells are striking observations and moreover may be quite confusing to the inexperienced observer; so much so, that one may suspect their being gonococci. Diligent search will be rewarded by the finding of short chains of gram negative cocci and, perhaps, gram positive diplococci in the same smear. This should aid in preventing one from making a diagnosis of gonococci from the smear alone. We have a record of a patient who was told he had gonococcic arthritis of the knee because of swelling and tenderness of the soft tissues and who upon admission had no evidence of having had an arthritis, but who did have a draining sinus of several months' duration following surgical incision of what was most likely a micrococcus myceticus cellulitis. Further suggestive evidence of this being the case, was the fact that the patient was told only bloody fluid was obtained at the

time the surgical incision was made. We recovered the micrococcus myceticus in smear and culture from the sinus at the time this patient was admitted to the Clinic. The onset of his disability was nine months before admission. It took us three months to cure him.

We have had very little difficulty in growing the micrococcus myceticus. Special media such as dextrose brain broth, Loeffler's blood serum and blood agar plates serve satisfactorily to grow it as well as to perpetuate the culture. Caution must be exercised in that transplants must be made every few days in order to consistently preserve the stock culture. Cultures of the coccus may be trained to grow, eventually, on ordinary media such as plain agar, but one will not obtain growth on this medium upon direct inoculation from the ulcer.

In dextrose brain broth, growth is fluent and in the form of long chains which tend to become entangled to form visible flocculi which eventually settle to the bottom of the tube, leaving a clear supernatant medium above.

Growth on blood agar plate appears in from 18 to 48 hours and invariably hemolyzes the blood. The colonies at first are pinpoint greyish-white, moist, smooth, and becoming granular at the border later, with the tendency to become confluent later.

The cocci isolated from the pseudomycotic ulcers grow better under anaerobic conditions. This has been demonstrated by inoculating two poured blood agar plates at the same time and incubating one in a Novy jar and the other under aerobic conditions.

One needs all available information in diagnosing pseudomycosis. The diagnosis must rely upon the history, clinical findings and laboratory data. A history of long standing ulceration of the leg is pertinent. Especially is this true if the consistent conventional forms of treatment have been applied. There may be a history of one or more of the ulcers having healed while at the same time new ones made their appearance. To one familiar with the disease the very appearance of these ulcers is peculiar and different to the usual run of ulcers. They are often multiple and frequently seen in the 'teen age and in young adults. Thirty-one of 44 patients analysed and reported elsewhere[9-10] were less than 31 years old. The period of morbidity will be greatly extended if one relies upon the laboratory diagnosis alone to guide him in his therapy. This is due to the likelihood of the laboratory reporting the culture as being an ordinary hemolytic streptococcus and the unsuspecting physician being disregardful of its presence and importance in such a lesion, applies the usual ointments or salves to the ulcer and allows the patient to go on about his affairs. This is especially true if the ulcer is of the more uniform rounded nonundermined form. On the other hand, let it be emphasized that one should suspect pseudomycosis in any patient with an ulcer of the leg from which an hemolytic streptococcus is reported as having been recovered by the laboratory.

A few patients with chronic skin syphilis have been encountered in the Clinic which were somewhat confusing with pseudomycosis, clinically, but were ruled out by obtaining a positive complement fixation test and by not finding the micrococcus myceticus on culture. The true mycoses and streptothricoses are ruled out by careful clinical and laboratory studies.

Varicose ulcers should give little or no trouble in differential diagnosis, especially if no special treatment has been applied to the veins before the patient is seen. It is conceded that pseudomycosis may coexist with varicose ulcers in which case, if the micrococcus (streptococcus) myceticus is found in the ulcer, it may be exceedingly difficult or impossible to determine which condition was primary. In such a case, treatment directed at the eradication of the infection should take precedence over all other therapy.

Tuberculosis of the skin is very rare and may be ruled out by biopsy and animal inoculation.

Out of the 44 patients, analysed as referred to above, 39 of them had no complicating factors whatever.

The prognosis in pseudomycosis is favorable in all patients. No bacteremia has been discovered and no deaths have occurred in our series.

The degree of resistance of the micrococcus myceticus infections to all kinds of

therapy so far tried is amazing. Moreover, the slowness with which healing occurs is disappointing. A high morbidity rate is a natural consequence. It was not at all uncommon in our series of patients[9-10] for the disease to have run a course of from a few months to several years. The shortest duration of the disease in the 44 patients previously reported was four weeks; the longest, 10 years, giving an average of 13.2 months. The shortest period of treatment before healing was established in our series was two weeks; the longest, 14.5 months, with the average being 2.7 months. We have used practically all of the different chemotherapeutic agents, as well as vaccines, X-rays and heliotherapy in an attempt to find the most effective method of treatment. Under present methods of treatment, the morbidity is still too high.

Although we have been unable to associate an impaired circulation with the chronic ulceration, it is imperative that the patient be put to bed. This can not be over emphasized. Failing to demand absolute bed rest, but attempting to treat the patient while ambulant, will bring disappointment to the patient and reflection upon the physician's success. One wonders if some of these ulcers would ever heal if bed rest were not demanded of the patient.

If upon examination, the ulcer is found to be dirty and covered with a crust, it is necessary to remove this immediately. This may be done manually or by means of a wet dressing of 10 to 25 per cent urea solution. This solution is very effective in removing all exudative material and may also aid in the production of granulation tissue. The wet dressing should be applied for one or two hours, three times a day, until it has accomplished its purpose. If the ulcer on admission is fairly clean, urea may not be necessary, but a continuous wet dressing of potassium permanganate solution of 1 to 1,500 dilution may be applied for the first 48 to 72 hours, changing the dressing once daily. After this initial period is passed, it may be used at night and at intervals during the day. We have found this highly effective in the open ulcers.

For the past four years we have been using Cysteine hydrochloride[12] in one-half of one per cent solution as a wet dressing for one hour three times a day. This is probably the most effective single therapeutic agent that we have used. The solution must be used while fresh and it is recommended that the part of the dressing next to the ulcer be discarded every 15 to 30 minutes during the treatment.

During the intervals between the wet dressings, cradle heat should be applied. In fact, it may be left over the affected limb continuously night and day.

In order to effectively treat the undermining dissecting type of ulcer, the above measures may be used but with little or no effect unless and until the actively infected undermined tissue is made accessible to the therapeutic agent by laying open the sinus. Even though surgical incision may be necessary, it must be said that the least surgery done is by far the safer. It is in this type of patient and those with diffuse cellulitis following surgical procedures, that we have seen the most extensive ulceration, and the severest systemic reactions. The electric cautery probably is the best choice of instrument to use in opening the sinus. If this is not accessible, immediate chemical cauterization of the freshly incised tissue is advised.

If skin grafting is contemplated it should be done with safety only after a number of bacterial counts have been made in which no gram-negative or gram-positive intracellular or extracellular diplococci are found in the ulcer. If these cocci are present in the ulcer when the grafts are applied many, if not all, of the grafts will probably be destroyed. This has happened repeatedly[9].

Zinc peroxide has not given any marked results in our experience although we have not used it in a large number of patients. The same thing is true in regard to sulfanilamide. Further use shall be made of it as opportunity permits. Goodman's[8] work with sulfanilamide in his ulcer patients, granting the etiology is the same in both, in so far as its shortening the period of morbidity, did not seem to be any more effective than our therapeutic regime. However, a larger series of patients treated with it may prove the supposition erroneous.

If interest is not aroused in this disease among physicians, especially general practitioners, surgeons, internes, and dermatologists, the condition will continue to exist unrecognized and the patient may thus nurse his ulcers for years. For it is the doctor who is treating the patient who must first suspect the type of ulcer he sees and in turn make the laboratory personnel wise as to his suspicion. If haemolytic streptococci are cultured from an ulcer one should immediately become suspicious that the condition may be pseudomycosis.

Conclusions

1. Pseudomycosis is a definite entity with a definite known etiology.

2. It is characterized locally either by the formation of a single pustule followed by an ulcer with no systemic reaction, or by a marked tissue reaction simulating a cellulitis accompanied by rigors, fever and leucocytosis. An undermining necrotizing effect to the skin is almost pathognomonic of pseudomycosis.

3. Micrococcus (streptococcus) myceticus has been recovered consistently from open as well as closed lesions.

4. The infection is believed to gain entrance into the body through the skin and not by way of the blood stream.

5. Locally the infection is thought to spread through the tissue spaces by direct continuity and by way of the lymphatics. Furthermore, there is strong evidence that auto-inoculation can and does occur.

6. The marked resistance to all forms of therapy is striking.

7. The disease has recurred as long as two years following the first infection.

8. Data concerning diagnosis and treatment are recorded.

Bibliography

1. Hamilton, J. F. Pseudomycosis Due to Micrococcus Myceticus: Preliminary Report. Journ. of So. Med. Association, Birmingham, Ala., March, 1931, 195-200.

2. Castellani, Aldo: Pseudomycosis Due to Coccus: Micrococcus Myceticus. Arch. Dermat. & Syph., 18:857, Dec., 1928. Abstract in the International Med. Digest, Tice, 14:140, March, 1929.

3. Castellani, Aldo: Personal Communication.

4. Lancefield, Rebecca C.: Correspondence.

5. Kilbourne, N. J.: Leg Ulcers of Unrecognized Etiology. J.A.M.A., 98:1955, June 4, 1932.

6. Meleney, Frank L.: Zinc Peroxide in the Treatment of Microaerophilic and Anaerobic Infections, with Special Reference to a Group of Chronic, Ulcerative, Burrowing, Non-Gangrenous Lesions of the Abdominal Wall Apparently Due to a Microaerophilic Hemolytic Streptococcus. Ann. Surg., 101:997, April, 1935.

7. Meleney, Frank L., and Johnson, B. A.: Further Laboratory and Clinical Experiences in the Treatment of Chronic, Undermining, Burrowing Ulcers with Zinc Peroxide. Surgery 1:169, Feb., 1937.

8. Goodman, M. H.: Correspondence. Chronic Streptococcic Ulcer of the Skin, Unresponsive to Local Therapy, But Cured by Sulfanilamide, Report of Two Cases. J.A.M.A., 111:1427-1431, October 15, 1938.

9. Hamilton, J. F.: Further Report on Pseudomycosis: Indolent Leg Ulcer Based on a Study of 54 Patients. Journ. of Tropical Med. and Hygiene, January 1, 1938.

10. Hamilton, J. F.: Pseudomycosis: Indolent Leg Ulcer. A Study of 54 Patients. South. Med. Journal, June, 1938, 579-590.

11. Hamilton, J. F.: Pseudomycosis: Case Report. Memphis Med. Journal, August, 1931.

12. Brunsting, L. A., and Simonsen, D. G.: Cutaneous Ulcers Treated by the Sulphydryl Containing Amino Acid Cysteine. Proc. Staff Meet. of the Mayo Clinic, 8:508, August 23, 1933.

Hospital Care and Schizophrenia

The importance of early hospitalization in bringing about recovery from schizophrenia (cleavage of mental functions) is emphasized in The Journal of the American Medical Association for June 10 by Jules Gelperin, M.D., Cincinnati, who made a study of 235 patients in the Cincinnati General Hospital.

The greater tendency for recovery among patients hospitalized soon after the onset of symptoms, he points out, is apparently not related to any specific treatment but rather to general care.

Of 103 patients whose symptoms were of less than six months' duration prior to hospital admission, 53 were discharged from the hospital improved. Of 30 patients whose symptoms were present for from six to 24 months prior to hospital admission, nine were discharged as improved. Twenty-seven patients showed improvement among the 90 whose symptoms were present for more than 24 months prior to hospitalization. Five of 12 patients whose symptoms were of undetermined duration were improved at the time of discharge from the hospital.

Dr. Gelperin later tried to interview all of the 94 improved patients, but only 21 could be located in the comumnity. Three had reentered the hospital because of recurrence of the condition, 12 months, 22 months and four years after the first discharge.

The 18 patients (14 men and four women) who remained in the community with no return of their symptoms were interviewed. Eleven of the men were working full time and three part time. One woman was working full time outside her home and three were carrying on their household duties.

These improved patients had remained out of the hospital from one to 55 months, the average being 25.9 months.

Sulfapyridine Brings About Recovery of Girl With Influenzal Meningitis

Treatment with sulfapyridine resulted in the recovery of a girl of 2 from influenzal meningitis with bacteria in the blood stream, Tom R. Hamilton, M.D., and Frank C. Neff, M.D., Kansas City, report in The Journal of the American Medical Association for Sept. 16.

The authors knew of no published report of this type of meningitis in which treatment with sulfapyridine had been successful but said it seemed advisable to try it, especially since serum treatment offered little benefit.

Their patient's temperature became normal on the sixteenth day of illness, up to which time sulfapyridine was used in large doses and then reduced. Recovery has been complete without any remaining detrimental signs.

Pregnant Woman May Eat Cucumbers

There is no basis for the idea that cucumbers and melons should be avoided during pregnancy, according to The Journal of the American Medical Association.

Conditions Involving the External Ear*

HUGH EVANS, M.D.
TULSA, OKLAHOMA
Discussed By A. H. DAVIS, M.D.
TULSA, OKLAHOMA

By far the most common organisms which invade the ear canal are the well known pyogens, streptococcus and staphylococcus. Of the former, streptococcus hemolyticus has been cited as the offender in the greatest number of cases, while of the latter, staphylococcus aureus is most often encountered.

Corneybasterium diptheria, corneybacterium acnes, plaut-vincent's organism, bacillus funduliformis, pneumococci and in rare instances the tubercle bacillus are among the bacteriological factors involved. While some reports give the influenza bacillus as a causative organism, the consensus of opinion is to the effect that an influenzal filterable virus alone without the interference of the influenzal bacillus is the etiological factor, and that when the latter occurs it is only incidental. Some authors, however, maintain that both the virus and the bacterium must be present, and the matter resolves itself into a moot question.

Pathogenic fungi and yeasts, as well as many which seemingly play the roles of harmless saprophytes in nature, but which are capable of producing lesions in the animal body, have been cited more and more frequently in the literature, and are classified under the general heading as otomycosis. It occurs more frequently than is ordinarily suspected and is often unrecognized, but may cause considerable discomfort. Aspergilli, penicillia, the pathogenic yeasts and mucoracea, and certain of the tinea group of organisms, are most commonly found. It cannot be overlooked that such invasions may prepare the way for infections of staphylococcus and streptococcus.

Eczematous otitis externa may be confused with true eczema. Dermatologists today generally agree that the majority of cases of so-called eczema of the external auditory meatus are really examples of infective meatitis. Mitchell, a dermatologist of Chicago, states that itching and scaling skin conditions of the ear are often termed eczema and mycosis, but in reality they are pyogenic infections caused by hemolytic streptococci. It has been shown that the eczematous reaction occurs when the tissue cells of the skin become sensitized to any of the infecting micro-organisms or their antigens. Hence, it may superimpose itself upon any of the simple infections such as are produced by pityrosporon, staphylococcus aureus, streptococci or even the tubercle bacillus. In passing it is well to mention a few conditions which may be found, which are not of infectious origin, but which must be considered in differential diagnosis.

Malagnancies are receiving a great deal of public attention today. It is of note that malignancies of the external auditory meatus are of such rare occurrence that little reference is made to them in text books. In fact, it accounts for only 0.197 per cent of affections in statistics reported by the Eye, Ear, Nose & Throat department of the Edinburg Royal Informary. It is not usually difficult to diagnose, but it may be simulated by chronic inflammation with granulation tissue, by lupus of the ear or by rodent ulcer. Histological procedure should be resorted to in doubtful cases.

Ossification in the auricle is rare. It is usually observed in males past 50 years of age, and sometimes produces no symptoms. It may be caused by frost bite, syphilitic perichondritis and general debilitating disease.

Hand Schuller Christian's disease, which is a disturbance in the lipoid metabolism and characterized by the triad of symptoms (1) defects in the membranous bones,

Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May 3, 1939.

(2) diabetes insipidus and (3) exopthalmus, frequently involves the parietal and temporal bones. Graufenstein found evidence of ear involvement in 50 per cent of the cases reviewed. Rosenberg reports a case of xanthoma of the external canal, the type of cell being the same as found in this disease.

In secondary lues, condylomata may occur in the external meatus. The discharge is usually serous and may have a foul odor.

Suppurating sebaceous cysts may occur, since the cutaneous lining of the external auditory meatus is well supplied with sebacious glands, and the signs and symptoms may closely resemble furunculosis.

Predisposing Factors

1. *Trauma*: This is by far the most common predisposing factor, particularly in furunculosis. Any mechanical cause acting locally may accomplish this. Attempts to clean the ear by such objects as toothpicks, matches, hair-pins, ear-spuds, and so on, may result in the introduction of organisms and production of lesions; sea bathing or fresh water bathing and accidents of any nature may be factors.

2. When trauma is absent, there may be found to exist *debilitating disorders* lowering the general resistance to infection, such as tuberculosis, diabetes, cardiac disease, trophic nerve changes and rheumatism. Or there may be chronic skin disorders of the face and ears, such as seborrheic tendency, eczema or other scaly affections. Excessive use of bromides has been mentioned as a predisposing factor. Occasionally one will see infections accompanying or following an acute head catarrh.

3. *Acute infections* may be primary invaders, and thus serve as predisposing factors, chief of which are scarlet fever, measles, pneumonia, diphtheria, influenza, typhoid, variola, varicella, pertusis and cerebrospinal diseases.

4. Age and seasonal effects may be important, the majority of ear infections occurring in childhood and during the cold season of the year, the period from the middle of January until the middle of May showing the largest incidence.

5. The infective organism or virus may reach the ear by way of the blood stream producing eruptions that can be recognized as exanthematous, syphilitic or influenzal.

6. In passing we must mention such obscure etiological factors as heredity, environment, immunity, cell sensitization, the allergic condition and the virulence of the invading organism and its saprophytic or parasitis qualities.

Symptoms

Furunculosis: Furuncles in the ear do not differ essentially from furuncles in any other part of the body, except that due to the thinness of the lining membrane the swelling is more diffuse, covers a larger superficial area, and frequently almost occludes the canal in the early stages, but they are more painful. They sometimes offer difficulties in diagnosis; the anomilies which they simulate being principally aural polypi, perichondiritis of the auricle, granulations of the external canal, exostoses, paratid abscess, carious teeth, mastoiditis and middle ear conditions.

The earlier signs are itching and discomfort in the canal, due to the congestion of the perichondrium. Discomfort is experienced in mastication. Undue motion of the auricle elicits considerable pain.

Subjectively there is itching, fullness, heat and pain in the order of their development. Objectively, there may be impairment of hearing, tinnitus, redness of the canal, swelling of the canal, and finally suppuration.

The most important thing from the patient's standpoint is pain. It develops about 48 hours after the initial itching, of all degrees of severity depending upon whether the furuncle involves only the superficial layers or involves the deeper cartilaginous structure of the canal. It may be entirely out of proportion to the pathology found, becoming so severe as to be unendurable. In some cases it is excrutiating, radiating to the face, head and neck, and may be aggravated by pressure over the tragus or any movement of the mandible, such as mastication or yawning, which necessarily increases the pressure against the external fibro-cartilaginous canal.

Ispection of the canal during the early stages may fail to disclose any objective

finding whatsoever; or, at best, a small reddened elevation may be discerned at times. The point of distinction between otitis externa and otitis media lies in the pain and tenderness of the former on manipulation of the auricle. The slightest attempt at lifting the auricle to straighten the canal for examination with a speculum causes exquisite pain. This is due to the associated perichondiritis. Due to the unyielding character of the cartilaginous frame-work, pressure on one point is communicated throughout its whole extent. In doubtful cases, observation over a day or so may still be necessary for accurate diagnosis. If the canal is not occluded, and it can be ascertained that the tympanic membrane shows little or no acute signs of inflammation, the diagnosis is certain.

Discharging ears may be the result of infection with a number of organisms other than staphylococcus or streptococcus, but which present similar symptoms. Laboratory procedures will point out the differential diagnosis.

Mycosis: Mycotic infections often give a sensation of intense itching, as though a foreign body were present. This is sometimes responsible for the trauma given by the patient himself, with a resultant pyogenic infection of the irritated canal, and pain becomes a prominent symptom.

During the beginning infection the skin of the canal becomes desquamated and exfoliated, with the production of a mass of debris, and may be at times so extensive that the canal becomes more or less occluded and the hearing of the patient impaired. Let us digress for a moment to consider briefly the anatomy of the ear canal. It is of irregular contour with a pocket like pouch near the drum, which makes for an ideal place for moisture and debris to collect. The skin is thin, with a small amount of subcutaneous tissue and is not very vascular. Thus accumulating moisture and heat predispose to the rapid and toxic growth of the fungi. As regards climatic conditions, it is therefore apparent that the incidence is greater in the temperate zones than in colder regions, accounting for the fact that it is a common condition in this part of the country during the summer season.

Mycosis is not a serious disease, but it is an annoying condition, and particularly in the summer, is responsible for many patients seeking relief for itching ears.

Therapy

The treatment of ear infections must be directed not only against the present attack, but also recurrences. When they occur as a result of a primary infection, or as a result of debilitation for any reason, systemic alleviation and improvement are the sine qua non, and presage the prognosis; this in addition to local therapy.

Heat: Heat is a great alleviative, and not only influences the status quo but relieves accompanying pain. Hot water bottles, the electric pad, diathermy and hot douches are all in order. The instillation of warm drops of glycerine or sweet oil and laudanum also accomplish the purpose, as well as such homely remedies as blowing smoke into the ear and breathing into the ear. Any procedure which influences the vaso-dilator mechanism brings into play such natural body defenses as exist. It will be recalled that there is a relatively impoverished supply of blood to the middle and inner ear.

Chemo-Therapy: The choice of a suitable non-irritating germicide to be applied locally may sometimes present a difficult problem. Drugs which prove efficacious in some instances may not produce comparable results in others, and the etiological factor is of cardinal concern. The literature reveals multitudinous therapeutic procedures, each authority advocating his favorites, all of which have indubitably proved of value.

Pyogens: In infections of pyogenic origin, the insertion of a small wick of gauze along the length of the canal permits continuous application of soothing medications. Spirits of boric or iodine in glycerine or aluminum acetate may be employed in this manner. From three to five drops are instilled every two hours. These have been found to be satisfactory alleviates of both pain and swelling.

As regards the external ear, we find mention in the older literature of many therapeutic agents, chief of which are:

1. Aq. opii 4.0., aq. dest. 12.0
2. 5% cocain solution
3. Burow's solution (argill. acet. solution Burowii aq. dest., aa 15.0, cocain muriat 1.0)
4. The insertion of a long piece of solid fat

(hog's), covered with a morphin-boracic acid salve (acid boric 1.0, vaseline 20.0, acet. morph 0.2)

5. Carbolic acid 0.5, glycerin 15.0
6. Boric acid 1.0, alcohol 20.0
7. Argill. Acet. Burowii and aluminum aceticotartaricum
8. Sublimate alcohol (hydr. muriat. corros 0.05-0.1, spirit vini rectif 50.0)
9. A cotton tampon, dipped in pure alcohol, or hot Billroth solution (lead acetate 1.0, alum 10., water 100.0)

Kerrison advises preparation of the canal prior to instituting treatment, by cleansing of all extraneous material by warm boric acid irrigations and scrubbing with applicators dipped in 95 per cent alcohol. He follows this preparatory treatment by pledgets of cotton saturated with phenol 1:100 dilution, which are allowed to remain one or two minutes. A wick of gauze is then inserted dipped in phenol 1:3000 dilution, which is allowed to remain 24 hours.

Phillips advocates a tampon of cotton dipped in either a 50 per cent boroglycerid solution or preferably a 12 per cent solution of phenol in glycerin, allowing it to remain 12 to 24 hours.

Turner believes the instillation of menthol in liquid paraffin (10 per cent) or of acetotartrate of aluminum (eight per cent) on a gauze wick, to be of value. He also used 10 per cent ichthyol in glycerine.

Hays cleanses the canal thoroughly, swabs with tincture of iodine and then packs the ear with a strip of gauze saturated in 4 per cent aluminum acetate solution.

Barnhill relies on sterilizing and cleansing the meatus with alcohol and then painting with tincture of iodine, and believes this will suffice in incipient cases.

Odeneal heartily criticizes phenol, and prefers a 5 to 10 per cent solution of aluminum acetate on a gauze wick within the canal.

Beck contributes the suggestion of dilute acetate of aluminum solution as a dressing within the canal.

Keeler first sterilizes the canal with applications of boric acid solution and then applies 70 to 95 per cent alcohol. He then inserts a gauze drain impregnated with camphorphenol (camphor gum 55 parts, phenol 45 parts). Ichthyol tampons are also applied.

Ballanger, in addition to the aforementioned carbolated glycerine and aluminum acetate solutions, also avails himself of the gentian and acriviolet dyes.

Gleason advocates the use of cotton tampons with yellow oxid of mercury ointment (six grains to an ounce of vaseline). He syringes the canal with warm 1:5,000 bichloride solution or paints the canal walls with 12 per cent silver nitrate.

Kerrison and Odeneal have raised valid objections to the long continued use of phenol as tending to macerate the skin and prolonging staphylococcus infections. Gidoll has found the same to be true of the excessive use of aluminum acetate, and advances his opinion that alcohol and glycerine answer every purpose in the abortive treatment of boils, setting forth their effectiveness in allaying pain and arresting the progress of infection. In any case, it should be reiterated that care must be taken that none of the mendicants employed trickle down the canal and touch the membrana tympani.

Of the many ointments suggested, Brown believes those of a zinc base to be preferable, and advocates cream of zinc and Lassar's paste. He admits their chief function is probably protective in nature rather than germicidal. Sulphur and mercury ointments more often than not appear to be too irritating, however, three per cent amon. mg. has been highly recommended by Mitchell of Chi. When a stimulating ointment is required it will be found convenient to add liquor carbonis detergens (or its successor, liquor picis carbonis) to the zinc preparation. When desquamation is present, salicylic acid, 10 grains to the ounce, is essential.

In treating infections of the middle and inner ear, mechanical cleansing of the recesses is always impossible, and the procedure painful. Harris and Mertins have reasoned that if all the dead tissue in a suppurating ear could be dissolved, digested or cleaned away, the majority of these cases would heal spontaneously. For this purpose Mertins advances the use of a urea solution. Harris advocates powdered extract of carica papaya as a digestant, and his protocol is as follows: 3 drops of glycerine are placed in a medicine glass, together with 2 droppers or 2 c.c. of water, and about 15 gr. of the above named powder. Mix quickly with a metal appli-

cator and instill enough to be plainly seen in the canal when the patient is in a prone position with the infected ear toward the ceiling. After 1 or 2 minutes, dry with cotton. Repeat this procedure once or twice a week. The solution deterioates in five minutes, and application must be immediate. If redness and swelling are profuse, this must subside before repetition of the treatment.

Bacteriophage: Bacteriophage was discovered independently at about the same time by D'Herrelle and Twort about 20 years ago. They demonstrated that bacteria possess a lytic substance filtrable through the Bergfeld or other filters, and that this substance is able to ingest and destroy other bacteria of similar strains. It has been proven a valuable agent in aborting as well as curing furunculosis. Freund has had such striking success with this agent that he recommends the procedure before attempting any other form of treatment. Squibb & Co. and the Franco-American Co. have on the market, phage in 20 c.c. vials, which can be used either for topical application or hypodermic injection. It is also obtainable in ampules of 2 c.c. for injection purposes.

The staphylococcus phage yields better results than the streptococcus phage. It must be borne in mind that this agent is highly specific, and has no effect on unrelated organisms.

Bacillus Pyocyaneus Infections

In infections of the ear arising from pyocyaneus, Morley advocates syringing with boric lotion as hot as the patient will tolerate. After this the meatus is allowed to drain by posture for a few minutes. He makes no effort to cleanse the meatus, as the pain is exquisite. The ear is next filled with warm one per cent marboglycerin drops and a hot boric foment is applied, large enough to include the pre and postauricular glands. This treatment is carried out four-hourly, and is combined with initial purging by four grains of calomel in split dosage followed by salts. Incision is contra-indicated, and it is best to allow the boil to burst under the conservative treatment described. For chronic cases, the meatus is cleansed and dried, and a small quantity of boro-iodine powder tapped in and insufflated with Siegle's speculum. Care must be taken that none of the powder reaches the patient's or operator's eyes. Without delay the meatus is plugged with a firm pledget of wool and left undisturbed for 48 hours. It causes slight discomfort for the first hour or two, but is not intolerable. At the conclusion of this period the ear is gently syringed to clear away remains of the powder, the greater quantity of which has usually been dissolved, and the meatus filled with borospirit drops for a few minutes, afterward being drained by posture.

Hydrogen per oxide and ether as a cleanser, and the application of silver nitrate in spiritus aetheris nitrosi, have been used in pyocyaneus infections. Then spirit and biniodide of mercury, 1 in 4,000 was substituted for the ether. Argyrol (2 per cent), mercurochrome (1 per cent) and liquid iodex packs were given exhaustive trials, with disappointing results. Zinc ionization promised well, but recurrences were numerous.

Fungi: Treatment of otomycosis from the first has consisted chiefly in mechanical removal with fine forceps or an applicator followed by thorough irrigation: secondly, destruction of the offending invader and thirdly allaying the inflammation which their growth has caused.

If we can find an efficient agent fulfilling the second requirement without tissue damage, then nature will do much in the third instance towards a successful and satisfactory culmination.

Of the many fungicidal agents used, varying degrees of success have been obtained; that is, their use had allayed and not cleared up the condition; they have required multiple applications or they have acted as tissue irritants; they have been ideal in the hands of one worker and not with others.

Upon reviewing the literature dealing with otomycosis from 1844, when first described by Mayer, we find mention of some 60 different chemicals used since that time, either alone or in combination, in an effort to give relief or effect a cure. It is of historical interest to note that Schwartz in 1867 recommended cleansing with warm water, followed by application of two leeches inside the tragus. This was subsequently followed by an aqueous solution of lead acetate. The whole took six weeks to effect a cure.

From recent literature, it will be found that the following are the germicides in greatest favor:

Alcohol.
Salicylic acid 2 to 5% in alcohol.
Boric acid 2 to 5% in alcohol.
Zinc oxide.
Mercuric chloride.
Iodine dusting powder (Sulzberger).
Formaldehyde 2 to 5%.
Sodium borate.
Cresatin or metacresylacetate.
Tricresol 2% in glycerin.
Castellani's solution (saturated alcoholic solution of basic fuchsin to which 10% resorcinal has been added, with small amounts of phenol, boric acid and acetone).
Iodine in liquid petrolatum.
Phenyl mercuric nitrate 1/3,000 alcoholic solution.
Copper salts, such as copper sulphate, chloride and oleate.
Thymol. (Because of its tendency to produce a burning sensation, thymol is best mixed with oil, powder bases or diluted.)

Searcy and McBurney, who have done considerable experimental work on the efficacy of various germicides are of the opinion that metacresylacetate or cresatin heads the list in the degree of effectiveness as a fungicide in otomycosis. Wm. Gill, also an authority in this field, prefers a powder of the following formula:

Iodine—2.00 grams.
Tricresol—1.00 gram.
Thymol—1.00 gram.
Boric acid powder—100.00 grams.

Vaccines or filtrates from cultures of the responsible organisms have been used with varying degrees of success.

It is of interest that cerumen in the ear sometimes exerts a restraining influence against invasion with fungi, though it is true that instances have been encountered in which fungi were actually growing on a ceruminous plug.

Ultra Violet Ray: For the most part, the use of violet ray is mentioned in the literature in passing, but not advocated. However, Odeneal of Massachusetts in a resume of treatment of conditions of the ear, states that eczema of the canal can be relieved, but not cured, by its use. He does encourage it as a general radiation rather than a local application.

Shock Therapy: This therapy has its uses, but should be employed late in the disease. It is accomplished by the production of fixation abscess by injection of turpentine.

Insulin: D. C. Jarvis of Barre, Vt., has written glowingly in the literature of the use of small doses of insulin in ear disorders, as well as those of nose and throat. The basis on which his recommendations are made is in part theoretical and in part his own clinical experience and that of a correspondence study group. One may of course not agree with theoretical considerations and still have to acknowledge the claims of the experienced clinician when these claims are based on careful study of patients. Knowledge gained this way is frequently discovered in later years to have a sound basis in fact, even though the theory proposed may be found faulty. The curative value of small doses of insulin in cases of chronic otitis media in which the usual methods of treatment have failed, is attested by a number of competent observers. The usual dose is three units given subcutaneously daily, with a lengthening of the interval as clinical improvement takes place. Eventually the insulin may be given no oftener than once a week and continued for months.

Surgical Intervention: There is a growing tendency to withhold surgical intervention in every infection where other means are available, and it has come to be the court of last resort. There are numerous articles in the journals of the last few years, dealing entirely with the inadvisability of such procedure. The cardinal rule is: "Incise inflammation and spread infection; drain pus and hasten healing." However, it is very difficult to determine when the animal body has successfully walled off infection, as regards infections of the ear canal. Too, care must be taken in making incisions; for example, too deep an incision on the posterior wall may penetrate the mastoid cells, as this forms the anterior boundary of the mastoid bone. The facial nerve is located immediately below the articulation of the lower jaw, anterior to the cartilagenous meatus. Also the paratoid gland lies in close proximity. These structures must be kept in mind constantly. In infants the facial nerve is more exposed to danger, lying immediately below and internal to the attachment of the lobule; hence the greater danger of severing this nerve. Carelessness in the direction of the knife may sometimes cause the severance of the ligaments of the temporomaxillary joint and thus cause permanent facial disfigurement.

The use of anesthesia when surgery is resorted to, is generally recommended. As a rule the patient has undergone several

days and nights of unceasing and sometimes excrutiating pain, and it is brutal to subject him to additional torture. A whiff of ether or gas or ethyl chloride or nitrous oxide is both merciful and desirable. Local anesthetics are almost useless.

It is best first to probe for the most tender point or the point of fluctuation. If superficial, the incision is made simply through the swelling; if deep, it must be continuous down through the perichondrium. In some severe cases where the canal is completely occluded by swelling, parallel incisions of this kind may be made to advantage around the whole lumen. They radiate from the latter like the spokes of a wheel from the hub. They may be aptly called the "wheel-spoke incisions."

General Considerations: Looking at the picture as a whole, it is essential to contribute as much as possible to the comfort of the patient. Sedatives for sleep are indicated. It is a matter of choice whether morphia, barbiturates, amytal, amidopyrin or other sources are used. Diet should be restricted to liquids particularly in cases where mastication is quite painful. Fluids should be given in large quantities, not forgetting fruit juices.

In conclusion it should be called to your attention that there is nothing new mentioned, not even the new drug sulphanilamide. This paper is a resume of the literature and the purpose was to stimulate a little discussion in order to bring out your methods and your ideas. Therefore, we welcome your discussion.

BIBLIOGRAPHY

Urea Solutions in Treatment of Otitis Media, Martins, Arch. Otolaryngol. Vol. 26, No. 5, Nov., 1937.

A Clinical Note on the Treatment of Chronic Suppurative Otitis Media, Harris, Laryngoscope, No. 48, 276, 1938.

Furunculosis of the External Auditory Canal With Special Reference to Treatment by Bacteriophage, Freund, Laryngoscope, Vol. 46, 419, 1936.

Furunculosis of External Auditory Canal Gidoll, California and Western Medicine, Vol. 42, 378, 1935.

Otitis Externa, Morley, British Medical Journal, Feb. 19, 1938.

Otitis Externa, Brown, British Medical Journal, Oct. 9, 1937.

Furunculosis of the External Auditory Canal, Effler, Ohio State Medical Journal, Vol. 25, 546, July, 1929.

Otomycosis: An investigation of Effective Fungicidal Agents in Treatment, McBurney and Searcy, Vol. 45, No. 4, 988, Laryngology, Dec., 1936.

Archives of Otolaryngology, 28:10, July, 1938.

Insulin in Otolaryngology, A.M.A., 112:355, Jan. 28, 1939.

Etiology of Influenzal Otitis, Pirodda, Giornale di Batteriologia e Immunologia, Turin 21:657, Nov., 1938.

Diseases of the Ear, Griffith, Saunders & Co.

Otomycosis: Some remarks concerning its Prevalence, Symptomatology and Treatment; Gill, Annals of Atology, Rhinology and Laryngology; Vol. 47, 189, March, 1938.

Mycotic Infections in Otolaryngology; Gill, Southern Medical Journal, Vol. 31, 678, June, 1938.

Index of Differential Diagnosis, French, Wm. Wood & Co.

Cholesteatome-like Accumulations in the External Auditory Meatus, Lois D. Greene, Archives of Otolaryngology, August, 1933.

Allergic Diseases of the Ear, L. W. Dean, J. S. Agar & Lloyd D. Linton, Laryngoscope, Oct., 1937.

Primary Carcinoma of the External Auditory Canal and Meatus, Otto C. Risch & James R. Lisa; Laryngoscope, Sept., 1938.

Tuberculous Papillomatos Cutis of the Ear, Frank L. Dennis, Archives of Otolaryngology, July, 1930.

Otitis Externa Mycotica, King Gill, Archives of Otolaryngology, 16:76-82, July, 1932.

Vincents Infection of the Ear, L. H. Barenberry & J. M. Lewis, Journal of the American Medical Association, April 5, 1930.

Diseases of the External Ear, C. N. Deser, Journal of the Medical Society of New Jersey, March, 1935.

Physical Therapy in the Treatment of Diseases of the Ear, Nose & Throat. T. H. Odneal, Archives of Otolaryngology, July, 1931.

Aspergillis Infection as the Cause of External Ear Disease, Reben F. Simms, Southern Medical Journal, Dec., 1937.

Fungus Infection of the External Ear, Edqard J. Whalen, Journal of the American Medical Association, Aug. 6, 1938.

The Pharmacopia and the Physician, Clyde A. Heatly, Journal of the American Medical Association, Dec. 5, 1936.

Streptococci Dermatoses of the Ears, James H. Mitchell, Journal of the American Medical Association, May 14, 1936.

The Use of X-Ray in Obstetrics*

P. N. CHARBONNET, M.D.
E. O. JOHNSON, M.D.
TULSA, OKLAHOMA

With the improvement in equipment, the development and discovery of new technics and methods of X-ray diagnosis using different opaque medias, the use of X-rays has not only become a necessary adjunct to the teaching of obstetrics but also to the practice. Because of the many uses for X-rays in obstetrics several of the obstetrical clinics are equipping their own department with units instead of relying on the central X-ray department of the hospital. Even the most enthusiastic exponents of the clinical approach to obstetrics and the most critical of the laboratory methods welcome the aid a radiograph can give in the obese patient, where the question of hydramnios, multiple preg-

*Read before the Section on Obstetrics and Pediatrics at the Annual Meeting of the Oklahoma State Medical Association in Oklahoma City, May 3, 1939.

nancy, abnormal position and presentation of the fetus, and abnormalities of the fetus are often determined with difficulty if only the examiner's senses are relied upon.

In addition to the above uses of X-ray, the obstetrician often finds that they are of great value in the study of his sterility cases to determine an obstruction in the genital tract. They are often of value in the establishment of a diagnosis of early pregnancy, and in the differential diagnosis of pregnancy and tumors[20]. In cases of disproportion, pelvic contracture or bony deformity, X-ray cephalometry and pelvimetry may often be of great value in determining the conduct of labor. The diagnosis of death in utero, placenta previa, extra genital pregnancy can be demonstrated with X-ray. In some instances the age of the baby as determined by X-ray is of value. A well identified radiograph showing the fetal bony parts is indisputable in court, where the question is whether the patient has ever had a baby.

Obstetricians often have therapeutic abortions to perform and the use of X-rays to produce these is often the ideal way, especially in the patient that can take an anesthetic only with a grave risk to her life. Also X-rays are occasionally used for the purpose of sterilization in the female.

Many immediate problems which arise in the newborn are often the obstetrician's concern. X-rays will often aid materially in diagnosing congenital pneumonia, atelectasis, congenital syphilis, enlarged thymus, fractures, and other pathology of the newborn.

Besides these definite obstetrical conditions, there are the many other associated conditions from fractures to cancer which can occur in the pregnant woman where X-rays are of great value, both from the diagnostic and therapeutic standpoint.

It is not advocated that the use of X-rays should supplant any portion of the routine clinical obstetrical examination. Rather should they be used as an aid in corroborating a point in question which is first discovered by the clinical examination.

Two very recent experiences of the author impresses one with the value of X-ray studies of the obstetrical patient. Had a very capable internist directed the cathode rays into the pelvis instead of running repeated G. B., G. I., and chest films on a patient already in her fifth month of pregnancy, he could have diagnosed the cause of her gastric symptoms before her friends sent her to the obstetrician. Pelvic examination in this instance was not particularly easy. A Friedman test had not been run. The legal question of whether a certain patient had ever had a baby would have been facilitated by an X-ray, which is often more convincing to a jury than the testimony of many doctors.

Let us consider some of the indications for X-ray studies in obstetrics.

Use In Sterility Studies

Uterosalpingography[1-2-3-7] is effected by the injection of 5 to 8 cc. of opaque media such as Skiodan, Lipiodal and Hippuram into the uterine cavity with a tight fitting cannula using enough force to send the media into the tube and taking an X-ray film at periodic intervals thereafter. In obstetrics its chief use is to determine patency of the genital tract in sterility. Some have advocated its use to determine an extrauterine pregnancy in which case it is always well to rule out a coexisting intrauterine pregnancy. Before making a uterosalpingo gram all cases should be free of genital tract infection, bleeding, an intrauterine pregnancy and have had previous Rubin tests. In interpreting the X-ray, if there is an obstruction present one must always remember that the condition of the remainder of the tube is not known. This procedure is not without danger. Some cases of pelvic infection[4], abdominal and tubal pregnancies[5] have been reported following the oil injection. Several cases of the oil gaining entrance into the venous system of the uterus[6-8] have been reported. Violent rupture of the cervix[9] and oil embolism where the oil was found in the pulmonary vessels at autopsy have also been reported. However, in careful hands in selected cases uterosalpingography is a very valuable aid in sterility studies.

Diagnosis of Early Pregnancy, and Age of Fetus In Utero

Ossification of the fetal skeleton does not occur until the seventh week of gestation. Therefore the diagnosis of pregnancy by X-ray at present is not theoretically possible until at least the second month

of pregnancy. However, practically the diagnosis of pregnancy by X-ray cannot be accomplished before three and one-half months gestation where the bony skeleton has to be depended upon. Perhaps with the development of amniography[28] a technique may be devised where the fetal soft parts can be seen earlier. The value of X-ray for this purpose is little when one considers that a diagnosis can be made only three to six weeks before quickening. Other clinical and laboratory tests are of greater practical value.

The age[16] or maturity of the fetus in utero has been determined by roentgenological studies of the points of ossification of the fetal bones, measuring the fetal length, and by measuring a fetal bony part, such as the femur and tibia, or occipto-frontal diameter and computing its relationship to the length (Thoms).

Reed feels that since the weight of a full term fetus is so variable ranging from five to ten pounds that the most constant factor is the length which varies from only 48 to 53 centimeters. Thus, he doubles the length from the vertex to the buttocks to estimate the age of the fetus. Duvoir estimates the age of the fetus in days by multiplying its length in centimeters by the factor 5.6. He also determines the length of the fetus by multiplying the length of the diaphysis of the tibia and or humerus by 6.5 and added eight centimeters.

Thoms[11] uses the relationship of the occipto-frontal diameter to the fetal length to determine fetal maturity. Hess says that fetal maturity is indicated by complete ossification of the hyoid bone, presence of an ossifying center in the distal epiphysis of the femur, ossification of the transverse and articular processes of the vertebral arches, ossification of the first segment of the coccyx, and all bones of the hand but not of the carpus.

It would be very helpful if X-ray studies could determine post maturity of the fetus. Christie, a research fellow at Johns Hopkins is working on this problem at present.

Concluding one can readily see that the use of X-ray for this purpose is still academic.

Abnormalities of the Fetus and Death In Utero

In the obese patient with a thick pendulous abdomen the question of hydramnios and multiple pregnancy can easily be differentiated, often, but not always, by a single X-ray film. In the case of hydramnios abnormalities of the fetus should always be looked for. Some of the frequent anomalies are absence of clavicles, portions of the skull, and the radius. Also the presence of extra fetal bony parts can often be seen readily, such as extra digits, decephalus, etc. Hydrocephalus[12] is characterized by wide suture and fontanelles. Here the radiograph is of indisputable value since often if the condition is known one can determine the conduct of labor early.

An excellent rule is to examine by X-ray all patients with multiple pregnancies, and all patients who are to have an abdominal delivery (Caesarean section), if the clinical examination is in any way doubtful. It is unfortunate to do a Caesarean section to obtain a monster, unless it cannot be delivered otherwise because of its size or shape. And occasionally a clinical multiple pregnancy will prove to be a monster by X-ray.

Fetal death in utero can be diagnosed by X-ray examination by finding overlapping (Horner[13-14]) of the fetal cranial bones in the radiograph. Lordosis of the caudal half of the fetal spine (Jungmann) due to the loss of muscular tone in the lumbosacral muscles is also supposed to be a sign of death in utero. Other signs of fetal death are collapse of the thoracic cage, decalcification of the bones, and abnormally small fetus in proportion to the duration of gestation. However, most clinical evidences of fetal death in utero are satisfactory without corroboration of the radiograph, inasmuch as Dipple[19] has shown that the management of the patient is conservative anyway. After sufficient time has elapsed there is no doubt clinically of the death of the fetus (except possibly where it occurs early in pregnancy).

Placenta Previa

Roentgenological diagnosis of placenta previa by use of a cystogram has been accomplished by Ude and Urner[15-30] and corroborated by Wells[16], McIvor[19], and others. The cystogram is made by injecting 30 to 40 cc. of 12½ per cent sodium iodide with a catheter into the bladder followed by an X-ray film in the supine position. Normally, there is a distance of one centimeter

between the fetal head and the upper margin of the bladder, and a separation greater than this is indicative of placenta previa. The advantage of an X-ray diagnosis in this condition lessens the chance of introducing an infection by a pelvic or rectal examination, and the chance of separation by this manipulation. One disadvantage is that it is of little or no value (Robecchi) before the seventh month of pregnancy.

W. Snow was able to demonstrate the placenta in the routine roentgen examination of pregnant women in a high percentage of cases without the use of contrast media. Dr. A. L. Dippel is to demonstrate the placenta in X-rays in the coming meeting of the A.M.A.

The indications for X-ray in this condition are clear cut, and certainly any diagnostic aid which is of value without risk to the patient or fetus deserves frequent usage.

Cephalometry, Pelvimetry, and Disproportion[22-23-24-29-32-33-35-36-37]

In all previous conditions discussed the indications for the use of radiography are generally quite definite, since they may be based on a condition which arises during the course of the pregnancy. The measurement of the obstetrical pelvis immediately confronts the obstetrician when the patient first presents herself. The extreme accuracy with which Thoms, Hodges[33], Caldwell, Dippel[34], and others have measured the pelvis with the use of X-rays, and checked them subsequently with an actual measurement during a laparotomy suggests that this is the ideal method of mensuration. Both Thoms' and Hodges' method have been shown to be within two millimeters of accuracy. This almost exceeds the limit of accuracy in actual measurements. Also, Caldwell's classification[21] of the various shapes of pelves based on radiographic studies is considered by many to be the best yet available. Thus, the question arises whether or not at least every primipara should not have X-ray pelvimetry, since this is an ideal method of mensuration. This would mean that at least 600,000 women annually would receive this added attention at quite an additional expense. If this is a necessity then those who cannot afford it should be provided for by some means.

One must remember, however, that the bony pelvis is not the only important factor in the passage of the fetus through the birth canal. Many of us have seen a large fetus come through a small pelvis, so that clinical judgement, soft tissue resistance, adaptation, etc., are still important in deciding this problem. It seems then that even though radiographic mensuration of the pelvis of each woman would be ideal, as well as cephalometry at term, that other factors such as soft tissues, stretching of ligaments, etc., preclude and make unnecessary its routine use at present. However, a step forward in the care of our obstetrical patients would be the use of X-ray pelvimetry in all patients that have contracted or border-line pelvic measurements as taken during a clinical examination. Also, X-ray of the pelvis is indicated in all abnormally shaped pelves from whatever cause, trauma, disease, birth, etc.

The question of cephalometry[26-27] and disproportion[25] can be considered together. Obviously if there is a definite clinical disproportion there is no need of X-ray confirmation. However, with the use of technics of Ball[31] and others cephalometry and pelvimetry is of great aid in the determination of disproportion in the borderline cases, that cannot be determined clinically.

Discussion of uses in sterilization and abortion may be checked in the literature as listed[39-40].

Conclusion

Concluding, one can say without fear of contradiction that X-rays are fastly assuming a more and more important role in obstetrics, and that every obstetrician should stay well acquainted with its development in order to offer the best and most intelligent care to his patients.

Bibliography

1. S. G. and O., 60:224, Feb. 1, 1935.
2. Radiology, 21:568, Dec., 1933.
3. Am. J. Obst. and Gyn., 33:164, Jan., 1937.
4. Gynec. et obst., 31:852, June, 1935.
5. Am. J. Surg., 29:244, Aug., 1935.
6. J.A.M.A., 104:545, Feb. 16, 1935.
7. Am. J. Obst. and Gyn., 29:100, Jan., 1935.
8. Am. J. Obst. and Gyn., 28:568, Oct., 1934.
9. Zentralb f. Gynak, 60:1154, May 16, 1936.
10. Curtis Textbook "Obstetrics and Gynecology," Vol. III.
11. Am. J. Obst. and Gyn., 29:876, June, 1935.
12. Bull. Soc. d'obst. et de gynec. 24:625, Dec., 1935.
13. S. G. and O. 35:67, 1922.
14. Am. J. Obst. and Gyn., 32:67, 1936.
15. Am. J. Roentgenology, 31:230, 1934.
16. J. Okla. State Med. Assoc., Aug., 1937, page 285.

17. Texas State J. Med., 32:471, Nov., 1936.
18. Am. J. Obst. and Gyn., 33:436, March, 1937.
19. Bull. Johns Hopkins Hospital, 54:24, 1934.
20. Am. J. Surg., 18:270, 1932.
21. Am. J. Obst. and Gyn., 28:482, Oct., 1934.
22. Am. J. Obst. and Gyn., 28:497, Oct., 1934.
23. J.A.M.A., 102:2075, June 23, 1934.
24. J.A.M.A., 102:602, Feb. 24, 1934.
25. Ill. Med. J., 66, 171, Aug., 1934.
26. S. G. and O. 58:721, April, 1934.
27. Am. J. Obst. and Gyn., 27:691, May, 1934.
28. Am. J. Obst. and Gyn., 27:894, June, 1934.
29. West J. Surg., 43:84, Feb., 1935.
30. Am. J. Obst. and Gyn., 29:667, May, 1935.
31. Am. J. Obst. and Gyn., 32:249, Aug., 1936.
32. S. G. and O., 61:735, Dec., 1935.
33. Am. J. Roentgenol., 37:664, May, 1937.
34. S. G. and O., 68:642, March, 1939.
35. Am. J. Obst. and Gyn., 34:150, July, 1937.
36. N. Y. State J. Med., 38:83, Jan. 15, 1938.
37. Am. J. Obst. and Gyn., 35:938, June, 1938.
38. Jour. Okla. State Med. Assoc., p. 236, July, 1938.
39. Amer. J. Obst. and Gyn., 34:507, Sept., 1937.
40. Amer. J. Obst. and Gyn., 32:945, Dec., 1936.

Infection in Extremities of Diabetics

W. D. HOOVER, M.D.
TULSA, OKLAHOMA

Infection and gangrene, in extremities, accompany each other with such frequency in diabetic individuals that it is almost impossible to discuss one group without the other. For this reason both are included in this paper. Surgical conditions in extremities of diabetics are becoming more numerous in recent years. Increased longevity as a result of insulin therapy accounts for this rise due to the vascular changes attending long standing diabetes. This fact together with the great use of machinery in our age bring many diabetics with injuries, infections and gangrene to the surgeon. This paper is limited to the extremities and the usual surgical conditions of the abdomen, chest or neck can be more fittingly discussed when those regions are discussed from a surgical standpoint.

Diabetics notoriously have great susceptibility to infection as well as poor resistance to them. Infections occurring in unrecognized diabetics often become advanced conditions before reaching the surgeon. Arteriosclerosis, which is a gradual process characteristic of this disease, contributes greatly to surgical affections of the extremities in the later years of life. Accidental injury, either in the course of daily pursuits or in industry, is an etiological factor of major importance in these cases. Especially is it becoming important from a medico-legal and insurance standpoint. Many of that type of cases are of the untreated and unrecognized diabetic.

In reviewing the literature on this subject it is surprising to note the extremely high mortality rate which attended these cases in the years previous to 1924. The rate at present remains rather high but previous to 1912 the rate was 80 per cent. From 1895 to 1926 in a group of 1,864 operations the mortality rate was 25.6 per cent. McKittrick recently reported operations on extremities in 807 cases with a mortality of only 8.4 per cent. Walters, Meyerding, Judd and Wilder of the Mayo Clinic report a group of this type of cases of recent years. There were 226 in the group and in 155 without surgery the mortality rate was 23 per cent while in 71 with surgery the rate was seven per cent. The mortality rates become very impressive when viewed from the standpoint of previous diabetic management. Standard, Ralli, and Brandaleone in 1938 report 343 cases of infection or gangrene of the extremities only 141 of which had had previous diabetic management and the mortality rate in this group was 10.6 per cent. The remaining 192 who had received no previous diabetic care had a mortality rate of 35.4 per cent. Of a small group of cases in St. John's Hospital in Tulsa, Oklahoma, from 1934 to 1939 the mortality rate was close to this. The mortality rate in the untreated was 41.6 per cent while in the treated it was 10 per cent. The average age was 61; the youngest being 41 and the oldest 78.

In considering the diagnosis in these cases one must not undervalue the simple test for sugar in the urine. This test should be made on any patient who presents himself for treatment of infections of the ex-

tremities or any suspicious lesion of the extremities. Often it is neglected for several visits so if it is made when these cases are first seen much time may be saved because the infections will not improve if the diabetes is unrecognized and untreated. If sugar is present in the urine the blood sugar determination should be made to clinch the diagnosis of diabetes.

The treatment of this condition requires, always, prompt surgical procedures. Before these measures are undertaken, however, the patient must be carefully investigated and meticulously prepared for operation. This must be done as quickly as possible but nevertheless very thoroughly.

In the treatment, bed rest, proper diabetic diet, adequate insulin and large quantities of fluids are of prime importance in preparation for surgery. Many varied opinions exist with regard to diabetic diet but the diet my associate and myself have found most beneficial in the surgical diabetic is one high in carbohydrate with a moderate amount of protein and low in fat. Diets consisting of 180 to 250 grams of carbohydrate, 70 to 80 grams of protein and 60 to 70 grams of fat in 24 hours seem to be the most satisfactory. Insulin should be given frequently and in sufficient amounts to render and maintain a sugar free urine and a blood sugar level near normal. Fluids should be given freely by mouth and glucose in normal saline must be given intravenously at times before operation to be governed by the individual case as to frequency and amounts. Some insulin is given at the same time the intravenous glucose is given but not with the purpose of completely neutralizing the sugar. It is unnecessary and sometimes dangerous to attempt to completely neutralize the glucose given intravenously. Careful preparation as described here is designed for the chief purpose of obviating acidosis which is so often disastrous in diabetes. If possible the patient should be under the care of an internist for as one can readily see, medical supervision here is tantamount to surgical success. Supervision of an internist is often impossible, hence the surgeon must be prepared to render this service himself.

For anaesthetic the spinal is the anesthesia of choice, unless rapid incision only, is to be done in which case short inhalation anaesthesia such as ethylene oxygen may be used. Ether disturbs the patient's metabolism and leads to acidosis, thus it should be avoided.

Surgical measures should be instituted as early as possible after proper preparation of the patient has been rapidly accomplished. The exact type of procedure to be undertaken depends upon the condition present. In infections this depends upon the circulation of the extremity and the depth of tissues involved in the process. Superficial infections in extremities with adequate circulation may be treated by wide incision. If this is done early enough often gangrene is prevented because gangrene is usually secondary to local thrombosis resulting from infection. If cellulitis extends to deep tissues amputation is indicated. Amputation is also indicated with gangrene of any degree where sepsis is present. Gangrene with apparent advanced impairment of circulation, evidenced by absence of dorsal pedis pulse and lowered temperature, should also be treated by amputation. Whatever procedures are employed should be as simple as possible and consume as little time as possible.

Amputations of infected extremities are done without the use of the tourniquet and those of the lower extremities are in most cases above the knee. This depends, however, much on the individual case taking into consideration the extent of circulatory impairment. A circular amputation, with little regard for flap, is done and the stump closed with drainage or left open entirely. Amputations where infection is absent and the patient is in satisfactory general condition may be of the flap type with more concern for the stump. Complete closure may be made in this instance without drainage. In cases with gangrene only more time may be spent in completing the preoperative preparation.

Post-operatively the same measures are instituted as pre-operatively. The treatment is greatly individualized, however, and much depends upon the general condition of the patient and the amount of sugar in the urine. Intravenous glucose in normal saline should be given in large amounts with sufficient insulin to utilize the major portion of the sugar. In the experience of my associate and myself 1,500 to 2,000 cc. of 10 per cent glucose in normal saline each 24 hours, for the first few days,

seems adequate to supply fluids, nourishment and prevent acidosis post-operatively. Of course the usual postoperative routine must be carried out including sufficient opiates to relieve pain and good nursing care. The urine must be examined frequently for sugar to help in determining the insulin dosage. Acidosis, manifested by the presence of acetone and diacetic acid in the urine, is more important and more to be prevented at this time than the presence of sugar in the urine. The removal of an infected area or proper drainage of abscessed regions soon increase the sugar tolerance of the patient so that less insulin is needed than before operation. This must be kept in mind and reductions in insulin dosage should be made as indicated to prevent hypoglycemic reactions. Oral feeding should begin as early as possible.

In diabetic surgery of the extremities aside from the local lesion much attention must be given the patient with regard to the disturbed metabolism peculiar to the diabetic and the treatment must be highly individualized. Short anaesthesia, expeditious surgery and close medical supervision are necessary for best results.

I wish to acknowledge my indebtedness to Dr. Thos. J. Lynch, my associate, for his counsel and advice which have been of great value in preparation of this paper.

BIBLIOGRAPHY

1. James E. Paulin. S.G.O. Feb. 15, 1939.
2. Leland S. McKittrick. S.G.O. Feb. 15, 1939.
3. F. M. Allen. Cyclopedia of Medicine. 1933.
4. Standard Brandaleone and Ralli. J.A.M.A., 1938, 110-627.
5. Rabinovitz and Weisman. New England Journal of Med., 1938, Vol. 219, p. 423.
6. Stanbro. J. Okla. State Med. Assn., Feb., 1939.
7. Walters, Meyerding, Judd and Wilder, Minnesota Medicine, 17:517-526, (Sept.) 1934.
8. Leland S. McKittrick and H. Root. Diabetic Surgery. Lea & Febiger, 1931.

Renal Emergencies*

ALFRED R. SUGG, M.D.
ADA, OKLAHOMA

In a sense any renal disease is an emergency, and a full discussion on any one of the major renal emergencies would consume all of the time allotted. The purpose of this paper then is not to go into a detailed discussion, but rather to call to your attention some practical suggestions in connection with serious disturbance of the urinary tract which are common and for which immediate diagnosis and prompt treatment is imperative if the patient is to survive. These every day emergencies are both surgical and non-surgical.

Anuria is one of the most dramatic and trying of these emergencies. It generally follows trauma, injection of poisons, or surgery, though it also follows burns, transfusions or even bacterial invasion. The actual production of the anuria is probably due to arterial congestion and swelling interfering with normal venous return. But whether it is secretory, obstructive or transitional in origin nothing is more disconcerting to the physician than to discover the patient has a large amount of albumin, casts and blood and that edema and blood urea are on the increase and in the later stages that no urine at all is passed.

This generally means that previous damage to the kidneys (or at least to the vascular system) has existed—as a post-operative condition it often means that a more careful study before operation would have served notice to abandon or postpone surgery or at least to have forewarned the surgeon. Often a trace of albumin was present—or there was a history of edema or of albuminuria or hypertension, either of which is a danger signal. Even a history of previous infectious disease especially of scarlet fever, septic tonsils, etc., should suggest estimation of blood urea,

*Read before the Section on Genito-Urinary Diseases and Syphilology, Annual Meeting, Oklahoma State Medical Association, May 3, 1939, Oklahoma City.

determining the CO2 combining power as well as renal function tests. The sick kidney is unable to concentrate solids and a test for this function is of great importance.

Post-operative anuria therefore, about adds up to preventing it rather than curing it. But if it slips up on us, a usually effective procedure is administration of concentrated glucose, or there is little doubt that sucrose in like amounts is more effective—200-500 c.c. of 20 per cent can be given at one time. Strohm says that twice as much urine is passed if sucrose is given first followed by fluids as the other way round. The diet should be low in salts and condiments with moderate reduction of protein, say to 50 gm. per day. If edema is present limit fluids to one liter until water balance is obtained and then gradually increase them. If no edema is present simple forcing of fluids by mouth or parenterally is often sufficient though there is danger of cell edema interfering with metabolism before clinical edema is in evidence.

If the patient is able to take fluids by mouth mild diuretics may be tried. Potassium nitrate in enteric coated pills after meals is the most effective.

There is much difference of opinion regarding the use of strong organic mecurial diuretics of which salyrgan is perhaps best known. Many men are dreadfully afraid of them and they may be harmful but I have never seen any apparent damage done by their use. Binger suggests a practical method for their use. If the output of urine is 300 c.c. or more per day and if the blood urea is below 50 mg. per cent, one c.c. of salyrgan can be given in the vein. If no toxic effects are produced such as diarrhea, hematuria, etc., develop two c.c. can be given the following day and two c.c. each third day as long as indicated. One of the safest and most effective drugs to stimulate urinary output is aminophylin and five gr. added to your intravenous solution may help. Urea itself is a valuable diuretic and should not be overlooked.

If cardiac weakness is a factor or if hypotension exists these factors should be treated, for the arterial tension must be 50 before any urine is secreted and anything below 100 renders the formation of urine difficult. If anuria is due to an obstructive lesion it goes without saying that removal of the obstruction is mandatory and that in a hurry. The obstruction need only be on one side as there is such a thing as reflex anuria. Surgery may help in some cases of anuria. Decapsulation undoubtedly does some of them good and should be tried when everything has failed. Whether it gives relief from the compression as some say or a disturbance of the enervation of the capsule is of no practical importance.

Nephrosis is a renal disorder which is an emergency, for failure to recognize and treat it promptly is serious. Whether it is a form of nephritis or not is beside the point. Edema is the outstanding characteristic. The urine is loaded with albumin and casts but R.B.C. are never present. The PSP test is normal. The serum protein is low and the albumin globulin ratio is reversed. It is considered that the fall in serum to a point so low that the osmatic pressure is below that of the capillary arterial pressure is the cause of the edema. If the protein of the blood goes to less than 4.5 grams, edema will develop. The osmatic pressure can be increased at least temporarily by blood transfusions or by intravenous acacia. Five hundred c.c. of a five per cent solution can be given every day or so. There is a concentrated blood serum which is reported to work well if available.

There has existed a time honored edict for many years that no meat, eggs, or other protein food could be allowed when albumin is present in the urine. For the past few years some literature has appeared to the contrary but the discussions have sometimes been more confusing than enlightening. Here then in nephrosis is one indication where the loss of protein through the kidneys is so severe that edema will soon put out of business other vital organs and it depends for its existence upon a minimum level of protein in the blood. The diet should contain not less than 75 grams of protein daily and even then you may have to resort to transfusions or acacia. If fluids are not restricted and salt withheld pulmonary edema is in the offing.

Uremia is classed as a renal emergency and it often is dramatic enough. If decreased (or absent) urinary output remains very long this symptom-complex will surely be manifested. It is not an entity and is not due solely to an excess of

urea. Cases with urea above 300 have been reported with little or no evidence of uremia. Furthermore kidneys will continue to handle urea until they are almost completely destroyed. A low NPN is not an absolutely safe criterion of impaired function. Creatinine will begin to accumulate earlier and its increase is often the first sign of damage. Uremia sometimes develops when there is a fair output. That is the kidneys can put out water but cannot concentrate solids, hence the urine is clear and has a low fixed specific gravity—1004 to 1007. It is especially unable to eliminate properly the normally produced acid products of metabolism. Also the impaired function interferes with the production of ammonia from urea, one of the mechanisms by which the normal organism compensates for acidosis. The increased acids in the blood stimulates the respiratory center and increases pulmonary ventilation thus tending to eliminate the excess acids in the form of CO2 through the respiration. This rapid respiration is the most valuable clinical sign of impending uremia. The other item of physiology which is effective is that the excess acids are combined with soda, thus if the CO2 is below the normal of 55 the alkali reserve is diminished. If the patient is too ill to take soda by mouth, Hartman's solution intravenously is ideal. It is much safer than soda bicarbonate and even the lactate is of value as it is either oxidized to produce energy or is synthesized to glycogen by the liver.

The treatment of the hypertension and increased intra-cranial phases of uremia is necessarily empirical since the cause of these phases is unknown. The dyspnoea, edema, and heart pain is cardiac failure and should be referred to the cardiologist or treated as any other heart failure.

The muscular twitching, itching, fetid breath, coma and convulsions are the results of dehydration and renal failure. Make up for the loss of power to concentrate by increasing the quantity of urine. The skin cannot eliminate solids, hence sweating is of little or no value. If aminophylin is added to intravenous fluids more can be given without producing pulmonary congestion or edema.

Hematuria is an emergency that the patient rarely neglects, especially a man. He gets scared and if he is not scared the doctor should be and should let no grass grow under his feet until a diagnosis is made. Bleeding from a bladder lesion with obstruction by clots is seen. If the clots are washed out and a large retention catheter left in place the bleeding will usually stop for it is the distention that keeps up hemorrhage. As soon as possible cystoscopic examination should be done even if the hemorrhage has stopped. If hemorrhage cannot be controlled by catheter then most of it can be by fulguration. Only occasionally is it necessary to do a supra pubic cystotomy. Culture of the urine (and often biopsy) at first cystoscopic is desirable. We want to know what bacteria are there at the onset not what we carry in with our manipulations.

Acute retention brings them in without urging and it is a real emergency. The patient is wild with pain and back pressure can easily produce reflux infection in the kidney not to mention reflex anuria and death. Much harm is frequently done the patient in this condition by the physician. Strictures and prostatic hypertrophy being usually the cause. Catheterization is not easy. The doctor often grabs a catheter of questionable sterility and with unwashed hands and no preparation proceeds to torture the patient with no visible results and with increasing discomfiture to himself. If a catheter won't pass when properly inserted it won't and it responds poorly to strong armed methods and woe be unto the patient when a careless doctor resorts to a metal catheter. The trauma, hemorrhage, infection, false pockets, extravasation, etc., following unskillful catheterization are legion. Cleanliness, gentleness and an assortment of instruments are all that are necessary. If one won't pass, try another, but if force is necessary then quit. Striking water is not the end of the danger for an over-distended bladder suddenly released may produce severe hemorrhage, shock, or even death. Decompress slowly; suprapubic cystotomy is much more desirable than forceful catheterization.

Renal colic is almost always due to obstruction which if not relieved will result in disaster. It should be remembered that morphine actually stimulates ureteral peristalsis and only when enough is given to act through the central nervous system is the pain relieved. This demonstrable physiologic fact has been known for some-

time now but it will be another generation before the doctor will stop going for the morphine pellet when a man is passing a gravel down his ureter. Atropine, nitroglycerin, amyl nitrite all tend to relax smooth muscle and should at least be given in conjunction with morphine. Pancreatic tissue extract, now available, will according to recent reports relieve ureteral pain presumably by counteracting the epinephrin in the tissues. If cystoscopic manipulation is necessary, I feel certain the special brand of Avertin put out for the purpose will relax a spastic ureter very well.

The chief surgical emergencies are due to obstructions, trauma and operative accidents. The obstruction demanding emergency attention would fill a book and will be passed here with the single phrase: Relieve the obstruction.

It is something of a paradox that the kidney injured by trauma is not as frequently an emergency as many other conditions. A patient who has received an injury to a kidney if it is not too severe will recover spontaneously with rest and time much more certainly than with ill considered surgical interference. This does not imply that every effort should not be made to determine the exact situation. Rupture of a kidney sufficient to produce extravasation is certainly surgical and the sooner operated the better. The kidney should be exposed in all suspected cases with a rising pulse (Wesson), falling blood pressure, anemia and bad general state though the shock should be treated first. They never bleed to death. It is infection of the blood clots and traumatized tissue that kills. For this reason catheterization should be avoided and if done only under the strictest asepsis. The diagnosis can usually be made by intravenous pyelograms and physical examination. Senger and Bottone report good results in a large series with ultra conservative measures. I recently saw a young woman who, while slightly inebriated, drove her car into a ditch. She was brought to the office at 7 p.m. The only complaint was pain in the right chest which was thought to be a fractured rib. She refused examination and seemed to be alright, so she went home 10 miles distant. At 2 a.m. she was brought to the hospital in grave shock. The bladder was filled with blood and blood was seen coming from the right ureter. In this case a retrograde pyelogram was made which showed severe damage to the kidney with a large hematoma between the kidney and the spinal column. As soon as the shock had abated a bit the kidney was exposed and the upper pole was found crushed beyond repair, so nephrectomy was done.

The point in reporting this case especially is to point out that irremediable trauma to the kidney can take place with absolutely no external evidence of injury and furthermore that the evidence of severe injury may be delayed for several hours.

The operative accidents producing urological emergencies are not often found in the literature but we all know they occur. In a single week last summer I saw two women with both ureters either cut or tied off and by surgeons of wide experience and high standing. I mention them here indirectly to call attention to two facts: first the true situation was not suspected for a much too long interval though there was anuria and rapidly developing signs of uremia. Second: In one case apparently in extremis a bilateral nephrostomy not only proved to be a life saver but in a few days the sutures were absorbed, the ureteral patency became re-established and in a few weeks normal kidney function returned, the nephrostomy sinus closed and the patient was discharged cured.

I was called sometime ago by one of our best surgeons to see a patient he had operated—bilateral ovarian tumors had been resected—the most difficult to remove being on the left side. A few days postoperative the abdomen became distended on the left side especially, with a dull percussion note and evidence of toxemia—suspecting a cut ureter he aspirated and removed a large quantity of urine. Thinking to relieve both himself and his patient he decided on a left nephrectomy. Imagine his chagrin when this procedure dried up the bladder completely but decreased by not a drop the output of urine from the abdominal urinary sinus. He had removed the wrong kidney.

These are but a few of the renal emergencies but they call for training, judgment and equipment with about equal division between decisive action and masterful inactivity.

New Books

NEW AND NONOFFICIAL REMEDIES, 1939, Containing Descriptions of the Articles Which Stand Accepted by the Council On Pharmacy and Chemistry of the American Medical Association on January 1, 1939. Cloth. Price, postpaid, $1.50. Pp. 617-LXVII. Chicago: American Medical Association, 1939.

Each year a revised list of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association as of January 1 is published in book form under the title of "New and Nonofficial Remedies." The book contains the descriptions of acceptable proprietary substances and their preparations, proprietary mixtures if they have originality or other important qualities, important nonproprietary nonofficial articles, simple pharmaceutical preparations, and other articles which require retention in the book.

A list of articles and brands accepted by the Council, but not described, is included in the book to cover simple preparations or mixtures of official articles (U.S.P. or N.F.) marked under descriptive, nonproprietary names for which only established claims are made. Diagnostic reagents which are not used in or on the human body, and protein diagnostic preparations are not included in New and Nonofficial Remedies unless the determination of the status of these products by the Council has been requested by the distributor: If such products are found to be marketed in accordance with the Council's rules, they may be included in the list of undescribed, but acceptable articles.

A supplement to the annual volume of New and Nonofficial Remedies is published twice a year to bring up to date such current revisions and additions as have been necessary since its last publication. Every product included in the book is subject to the official rules of the Council. The comments to rules are changed occasionally by way of clarifying interpretation to insure fair consideration of all submitted preparations as new standards are recognized. Such constant and critical consideration of its contents provides the physician with a valuable reference list of acceptable new preparations on which to base his selection for use in treatment according to the established current practices of the profession.

New and Nonofficial Remedies for 1939 omits many articles which appeared in the publication for 1938. A few of these have been omitted by action of the Council because they conflict with the rules that govern the recognition of articles or because their distributors did not present convincing evidence to demonstrate their continued eligibility. Among these are: biliposol, serobacterins and suppositories salyrgan. A considerable number of others have been omitted as being off the market.

The 1939 New and Nonofficial Remedies, of course, contains the revisions which appeared in the supplements for the 1938 edition, and continues the plan of grouping together articles having similar composition or action under a general discussion. These discussions have undergone considerable revision in the 1939 edition. Further revision of statements regarding the actions, uses, dosage, composition, purity, identity, strength or physical properties of many of the articles has also been necessary in some cases. Noteworthy revisions are: anesthetics, local; bismuth compounds, organs of animals; vitamins and vitamin preparations and liver and stomach preparations.

The indices of the new volume of New and Nonofficial Remedies are of the same order and plan as in previous editions. A general index lists accepted articles, including those not described. This is followed by an index to distributors in which appear all the Council accepted articles listed under their respective manufacturers. Finally, a bibliographical index is added for listing proprietary and unofficial articles not included in N.N.R. This includes references to the Council publications concerning each such article as has appeared in The Journal of the A.M.A., reports of the Council on Pharmacy and Chemistry, Propaganda for Reform, Vol. 1 and 2, or Reports of the A.M.A. Chemical Laboratory.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1938. Cloth. Price, $1.00. Pp. 120. Chicago: American Medical Association, 1939.

This volume as usual contains noteworthy examples of the various kinds of reports made by the Council on Pharmacy and Chemistry: (1) preliminary reports; (2) supplemental reports on therapeutic or pharmacologic problems; (3) reports on the rejection of preparations offered for the Council's consideration.

Among the preliminary reports in this volume that on sulfapyridine, which carries a special article by Dr. Perrin H. Long, a Council member who has been much concerned with the work on this drug, is perhaps of greatest interest. After the Food and Drug Administration had released the drug for the use of physicians early in 1939, the Council accepted various brands for inclusion in N.N.R. and in connection with the published descriptions issued another status report (J.A.M.A., 112:1830, May 6, 1939) based on a questionnaire sent to men who had been prominent in the experimental use of the drug. This report, no doubt, will appear in the next volume of reprinted Council reports. Other preliminary reports are the following: Allantoin, a preparation of glyoxyldiureid purposed to supersede the use of surgical maggots; and Sulfapyridine, published shortly before the Council acceptance of this new chemotherapeutic drug.

Among the supplemental (or status) reports are those on Colloidal Sulfur in the Treatment of Chronic Arthritis, showing that much confirmatory evidence is needed to establish the value of this therapy; on Ergonovine, a careful study of the relation of this newly discovered principle to ergot therapy in general; and on Picrotoxin in Poisoning by the Barbiturates, showing the promise and the present limitations of this antidotal therapy.

Among the reports of rejection the following are noteworthy: Collodaurum, a "colloidal gold" preparation, promoted with unwarranted, exaggerated and misleading claims for its use in the treatment of cancer; Dermo-G, stated to be a mixture of Spermaceti, White Wax, Oil of Sweet Almonds, Sodium Borate, precipitated Sulphur and Water, an unscientific and superfluous mixture marketed under a therapeutically suggestive name with exaggerated, unwarranted claims; Fru-T-Lax, a needlessly complex and unscientific mixture advertised to the public under a misleading and inadequately descriptive name with claims which are unwarranted; and Hyposols Sulisocol, claimed to be "Sulphur Colloid" in 2 cc. of "Autoisotonized Solution," exploited for use in arthritis with inadequate evidence of its therapeutic value. Other rejections are explained in the reports on Map and Myoston, Nupercainal-"Ciba," Pulvoids Sulfanilamide and Sodium Bicarbonate (The Drug Products Co., Inc.), Quinoliv, Sedormid, and Tri-Costivin.

THE JOURNAL
OF THE
Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council.

Copyright, 1939, by Oklahoma State Medical Association, McAlester, Oklahoma.

Vol. XXXII OCTOBER Number 10

EDITORIAL BOARD

Dr. Ned Smith.....Tulsa
Dr. L. J. Moorman.....Oklahoma City
Dr. L. S. Willour, Chairman and Editor-in-Chief....McAlester

Entered at the Post Office at McAlester, Oklahoma, as second-class matter under the act of March 3rd, 1879.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, McAlester Clinic, McAlester, Oklahoma. $4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester.

EDITORIAL

HIGHWAY FIRST AID

In 1933 through the efforts of Dr. E. Payne Palmer of Phoenix, Arizona, the American Red Cross became interested in the establishment of Highway First Aid Stations and while there has been considerable activity in Oklahoma in the development of this project there are still all too few of these stations along our highways.

Today we are spending millions in improving our highways and more millions in buying machines with greater speed and power. A million and a quarter people were injured in automobile accidents last year. Many of these accidents occur in the areas where there are no hospitals or facilities for their care. Consequently before trained assistance can be secured there is a considerable period when complications may develop. These complications may take the life of the injured person or lay the foundation for sequelae which will retard recovery or cause permanent deformities.

The establishment of these Stations should be encouraged by each County Medical Society. Proper locations should be selected and the training of the personnel supervised. Day and night service should be maintained where possible. There is no personnel cost in connection with this work as the entire service is on a volunteer basis from the time that first aid is given until the injured person is delivered to a physician or hospital.

The cost of operation is consequently slight and can be easily financed from the proceeds of the annual Red Cross roll call.

Accidents resulting in sprains, lacerations and bruises can be given first aid easily. Fractures can be handled so as to avoid further injury to the bones or soft tissues and prepared for transportation by fixed traction.

These stations are all properly marked and as they are established some publicity should be given as to their location.

Not only will such stations provide a much needed service but will be an ever present warning to the careless driver.

Will your County Medical Society help through the American Red Cross to develop this system along the highways of Oklahoma?

THE MEMPHIS MEETING OF THE SOUTHERN MEDICAL ASSOCIATION
NOVEMBER 21-24

Those who were privileged to attend either one or both of the previous meetings of the Southern Medical Association in Memphis (1917 and 1927) will remember the manifest charms of that city.

DATE OF THE MEETING

For some 30 years it has been the policy of the Association to meet between election week and Thanksgiving week. In determining the date for the Memphis meeting, the officers of the local society expressed a preference for the third week of November, November 21-24. And since

DR. EMMA JEAN CANTRELL

A unique position is that held by Dr. Emma Jean Cantrell (above) of Healdton, this year's president of the Carter County Medical Society.

Files of the Oklahoma State Medical Association show that Doctor Cantrell is the first woman to hold the presidency of such a group in a long series of years. She was elevated this year to head of the Carter county group from the secretary-treasurer position last year, an office not so uncommon for women physicians.

Doctor Cantrell moved to Healdton with her husband, Dr. David E. Cantrell, Jr., in January of this year. They practice with her father-in-law, Dr. D. E. Cantrell.

Dr. Cantrell was graduated from the Oklahoma school of medicine in 1933. After receiving her internship at the University and Crippled Children's hospitals in Oklahoma City, she spent the following year in Boston doing clinical work. With her husband, whom she met at Oklahoma university and married in 1927, at which time he was a pre-medical student, she moved in 1935 to Wilson, Okla. They practiced medicine there until their moving to Healdton.

Before her marriage, Doctor Cantrell was Miss Emma Jean Anthis, daughter of Mr. and Mrs. James M. Anthis of Muskogee.

---

that date did not interfere with either election or the traditional Thanksgiving, it was selected as the meeting date.

The announcement of President Roosevelt suggesting that Thanksgving this year be a week earlier caused considerable concern. Numerous obstacles stood in the way of any change of date for the convention. A large obstacle was the fact that engagements for the use of the necessary meeting place, the Municipal Auditorium, were completed nearly a year ago by the Southern Medical Association, and for other groups at other times. The officers of the Association, therefore, unanimously decided to hold to the original date. The Governor of Tennessee has announced that Tennessee will observe the traditional date, November 30, so the meeting will not be on Thanksgiving Day in Tennessee, even if it should be on Thanksgiving in some other states. Governors of Oklahoma, Alabama, Arkansas and other Southern states have also indicated that they will observe the traditional date of November 30.

Program

The program for Memphis will follow in general the plan of recent meetings. Tuesday will be "Memphis Day," a program of short clinical presentations by physicians of Memphis. A General Clinical Session, a program arranged by the President, will be conducted on Wednesday morning. Beginning Wednesday, the 19 sections of the Association and the three conjoint meetings will convene. A General Session featuring the address of the President, Dr. Walter E. Vest, of Huntington, West Virginia, followed by the President's Reception and Ball, will be on Wednesday evening. As usual, the alumni reunions will take place on Thursday night. On Tuesday evening there will be a public session, a program arranged for the laity.

The programs of the section and general meetings in Memphis are complete and promise generous and stimulating discussions of many phases of medical progress.

Group Hospitalization

On September 21 in Oklahoma City, Mr. Walter R. McBee of Group Hospital Service, Inc., of St. Louis was the guest of the committee on group hospitalization of the Oklahoma State Medical Association. He spoke to a large and enthusiastic crowd of doctors, hospital representatives, and laymen on the subject of group hospitalization.

This was the first step in presenting this topic as an anticipated project of the Oklahoma State Medical Association.

The following night Mr. McBee apepared on a program in Tulsa sponsored by the Tulsa County Medical Society.

Cancer Program

Dr. W. F. Keller, chairman of the cancer committee, has outlined a most extensive program to be operated in cooperation with the women's field army for the coming year. Any County Cancer Committee desirous of sponsoring a program of this nature in their county should write the offices of the association, 210 Plaza Court, Oklahoma City. Speakers and diversified material will be supplied upon request.

Clinical Conferences This Month

Of the various obligations which exist between the doctor and his patient, and which are assumed by everyone in the practice of medicine, two are outstanding. These are: first, to continue the study of medicine in order to be familiar with the advances which are constantly being made; and second, to keep one's self as physically perfect as possible in order to be able to continue under the constant strain of modern-day practice. It is rather a rare and unusual experience when one has the opportunity of developments along both these lines at the same time. This unusual situation is offered to the doctors of Oklahoma and surrounding states during the Fall Clinical Conference, October 30 through November 2.

For the past year committees of the Oklahoma City Clinical Society have been working long hours to perfect a program which would meet the requirements of the high standards, which have been set by this particular meeting in the past. This work has been, through the year, motivated not by any purpose of self-aggrandizement or the advancement of any particular group but rather entirely for the benefit of the busy men who make up the profession in this area.

The opportunity for study and for entertainment is offered with only one idea in mind; to-wit, the benefit of the medical profession. Each individual can, therefore, select for himself what he most desires to study and to learn, and he is assured of authoritative opinions on the subjects presented and at the same time a release from the turmoil and strain which is characteristic of medical practice. Round-table discussions give him the opportunity to hear discussed any topic in which he may be interested and which may not be included in the formal program.

More particularly than ever, is this year one in which such an opportunity should be utilized in order that our patients have the utmost in examinations and the best advice based on most recent advances. It will accomplish a great deal in the proper relationship of the physician and the patient, which relationship, always a great help to the physician, has to some extent been lost in recent years.

It is for these various reasons that the Oklahoma City Clinical Society invites the attendance of all doctors for the benefit of their patients and themselves.

Malpractice Insurance

With the season for renewal of malpractice insurance by the doctors of Oklahoma almost at hand, a great number of inquiries relative to the Oklahoma Group Malpractice policy are being received by the executive secretary's office.

This policy, which is written only for doctors who are members of the Oklahoma State Medical Association, is now carried by approximately 250 members of the state society. Insurance coverage in this policy, which is written by the Houston Fire and Casualty Company, is for minimum limits of $25,000 for any one claim and maximum limits of $40,000 for any one policy year.

Application forms have just been mailed to every member of the state organization and anyone desiring information is invited to write the state society office, 210 Plaza Court, Oklahoma City.

Locations

Of recent date, the office of the executive secretary has received numerous requests for physicians to locate in cities of Oklahoma.

Anyone desirous of investigating any of these locations please write to the office of the association, 210 Plaza Court, Oklahoma City.

Editorial Notes—Personal and General

The Tulsa city commission approved late in September the appointment of Dr. R. M. Adams of Ada as Tulsa city health superintendent. Doctor Adams, formerly a state health department officer, assumed his duties October 1.

Approximately 60 members of the four-county medical society, composed of medical groups of Pottawatomie, Seminole, Pontotoc and Hughes counties, attended the fall quarterly meeting recently in Shawnee at the home of Dr. J. A. Walker. Following a barbecue supper, a program was presented by the Hughes county medical society.

Construction of a much-needed ward building at the Western Oklahoma hospital, Supply, is expected to begin soon. Bids for construction work were to be received by the state board of affairs October 4.

Dr. O. E. Templin, Alva, has received his commission of a lieutenant-colonel in the medical reserve corps of the United States army for five years. Doctor Templin entered the war as a captain, and has been in the reserve corps since 1928.

Appointment of Dr. C. C. Gardner, Ponca City, as temporary superintendent of health of Kay county has been announced by the state health department. Doctor Gardner has been city physician at Ponca City for a number of years.

DR. D. W. BRANHAM wishes to announce the removal of his office from 514 to 502 Medical Arts Building, Oklahoma City, Oklahoma.

Appointment of Dr. Claude Bloss of Okemah as American Red Cross roll call chairman of Okfuskee county has been announced by G. W. McCoy of the national organization.

Visiting Oklahoma City physicians presented two medical papers at the Caddo county session of the Tri-County Medical society in Anadarko recently. Dr. Rex Bolend, presenting a paper on "The Male Climacteris," was followed by Dr. Wilbur F. Keller, who spoke on the same subject. Dr. R. Q. Goodwin gave the second paper, "The Anemias."

DR. W. P. LONGMIRE and family of Sapulpa are leaving for the East, October 12. The doctor will attend the meeting of the American College of Surgeons at Philadelphia. From Philadelphia he will go to Baltimore to visit his son who has a residency in Johns Hopkins Hospital.

Members of the Women's Auxiliary of the LeFlore County Medical Association held their first regular meeting recently at the Judkin-Forbes hotel in Poteau. Following presentation of the constitution and by-laws, Mrs. Wayne Lowrey discussed the Southeastern medical meeting at Poteau and Mrs. W. L. Shippey talked on philanthropic work.

Dr. John F. Hackler, Stillwater, has completed his enrollment in the School of Hygiene and Public Health, Johns Hopkins university, and expects to receive the Master of Public Health at the close of the school year.

Dr. Troy F. Long and Dr. John Davenport, two newcomers to Holdenville's medical fraternity, were guests at the September meeting of the Hughes County Medical Society. Discussion of various

problems and developments of interest to the profession made up the program.

New county health officer of Nowata county is Dr. S. P. Roberts of Nowata, according to an announcement by the state health department.

Dr. Ray H. Lindsey of Pauls Valley was engaged in a few weeks post graduate medical course last month at the Cook County hospital in Chicago.

DR. GEORGE H. KIMBALL gave a talk on Plastic Surgery showing slides of same, at the Woods County Medical Society meeting at Altus on September 25, 1939. Dr. Algood was Chairman at Altus.

OBITUARIES

Dr. W. S. Stevens

Death came Monday, September 11, to Dr. Walter S. Stevens, first superintendent of the Choctaw-Chickasaw sanitarium at Talihina and for the last 14 years medical director of district five, U. S. Indian service. Doctor Stevens died at St. Anthony hospital in Oklahoma City following an extended illness.

Born in Pike county, Illinois, he studied medicine at Barnes university, St. Louis, returning to his home county in 1914 to begin the practice of medicine at Hull. He entered the Indian service and came to Oklahoma as first superintendent of the Choctaw-Chickasaw sanitarium at Talihina in 1919.

When the district five medical setup was made in 1925, he was named director, with offices in Shawnee. In 1932 the office was moved to the federal building in Oklahoma City, and Doctor Stevens had lived there since.

Doctor Stevens is survived by his wife; a sister, Mrs. R. F. McCallister; and his parents, Mr. and Mrs. William Bell of Rockport, Ill.

The body was sent to Springfield, Ill., for interment.

Dr. V. M. Wallace

Dr. Virgil May Wallace of Morris, Oklahoma, died August 22, 1939, at his office, following a stroke of paralysis.

A native of Cleveland, Ark., Doctor Wallace was graduated from the medical school at the University of Oklahoma in 1911. He began the practice of medicine in Allen, Pontotoc county, moving to Morris in 1914. He had been there continuously since that time. He was a member of the Masonic lodge, and a Shriner.

Surviving are his widow; two sons, a brother and three sisters.

Funeral services were conducted from the home August 24, with the Rev. L. L. Shaw, pastor of the Christian church at Morris, officiating.

Dr. L. A. McComb

Dr. L. A. McComb, Tulsa surgeon, died at his home in Tulsa September 2.

Private funeral rites were held in the chapel of the Fitzgerald funeral home September 4, with Dr. Golder Lawrence, pastor of the First Methodist church, officiating. Interment was in Memorial Park.

Doctor McComb is survived by three children, Mrs. Howard Gooden of Tulsa, and Virginia and Martha Ann of the home; his parents, Dr. and Mrs. J. W. McComb of Jacksboro, Texas; three sisters and three brothers.

CONTINUOUS ACCEPTANCE BY THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION SINCE 1932

A SCIENTIFICALLY constituted product devised for physicians' use in modifying fresh cow's milk or evaporated milk for infant feeding.

The addition of Hylac to diluted fresh cow's milk or diluted evaporated milk will result in mixtures containing the food constituents—fat, carbohydrate and protein—in essentially the same proportions as in woman's milk.

Furthermore, a formula in which Hylac is used as a modifier contains practically twice as much iron as a corresponding formula modified with carbohydrates alone.

The steadily increasing use of Hylac in the practice of pediatrics attests to the fact that physicians who have tried Hylac have obtained successful results from its use.

No laity advertising. No feeding directions given except to physicians.

For free samples and literature, mail your professional blank to

NESTLÉ'S MILK PRODUCTS, Inc.
155 East 44th Street . . . New York, N. Y.

Resolutions

Whereas: Virgil M. Wallace, M.D., earned the love and respect of the people of Morris, Okla., and its surrounding territory by his many years of service as their family doctor, as well as by his cheerful, and friendly personality; and

Whereas: He was ever faithful and loyal to the best interests of his fellow practitioners of medicine, serving actively in any positions of honor and trust, to which he was called by the Okmulgee Medical Society; and

Whereas: He has now been called to his eternal reward;

Therefore: Be it resolved, that the Okmulgee County Medical Society, in regular meeting, assembled, this 18th of September, 1939, do hereby express their deep regard and respect for Dr. Wallace, and their sympathy for his bereaved family; and

Do direct a copy of these resolutions be sent to the family, be placed in the archives of the society, and be published in the Journal of the Oklahoma State Medical Association.

S. B. Leslie, M.D.
T. C. Carloss, M.D.
M. B. Glisman, M.D., Chm.

Whereas: Loyal B. Torrance, M.D., served the people of Okmulgee faithfully and well, throughout his whole active medical life, from 1909 to the time of his last illness; and

Whereas: He always was interested in the affairs, activities, and interests of the medical profession, of this County and State, as well as in the progress of medical science, serving faithfully and well in every position of honor and responsibility to which his colleagues called him; and

Whereas: He has now been called to his eternal reward;

Therefore: Be it resolved, that the Okmulgee County Medical Society, in regular meeting, assembled, this 18th of September, 1939, do hereby express their deep regard and respect for Dr. Torrance, and their sympathy for his bereaved family; and

Do direct a copy of these resolutions be sent to the family, be placed in the archives of the Society, and be published in the Journal of the Oklahoma State Medical Association.

S. B. Leslie, M.D.
T. C. Carloss, M.D.
M. B. Glissmann, M.D., Chm.

Examinations—American Board of Obstetrics and Gynecology

The written examination and review of case histories (Part I) for Group B candidates will be held in the various cities of the United States and Canada on Saturday, January 6, 1940, at 2 p.m. Formal notice of the place of examination will be sent each candidate several weeks in advance of the examination date. No candidate will be admitted to examination whose examination fee has not been paid at the Secretary's Office. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held in June, 1940.

Candidates for re-examination in Part I (written paper and submission of case histories) must request such re-examination by writing the Secretary's Office not later than November 15, 1939. Candidates who are required to take re-examinations must do so before the expiration of three years from the date of their original examination.

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board, meeting in Atlantic City, N. J., on June 8, 9, 10, and 11, 1940, immediately prior to the annual meeting of the American Medical Association in New York City.

Application for admission to Group A, Part II examinations must be on file in the Secretary's Office not later than March 15, 1940.

After January 1, 1942, there will be only one classification of candidates, and all will be required to take the Part I and Part II examinations.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

Tri-County Health Unit Program

Approximately 2,200 typhoid fever immunizations have been given in 22 schools in Bryan county in early fall operations of the extensive program of the tri-county health unit, composed of Bryan, Marshall and Love counties.

The clinics were held in school buildings in each community, while in some cases transportation was arranged with several schools meeting at a central point.

Central headquarters for the unit are at Madill, the staff including a doctor, Dr. William Mead; a sanitarian, Mr. New; a clerk, and three nurses.

The program will include immunization for typhoid, smallpox and diphtheria, prevention and spread of contagious diseases where follow up work may be arranged, examination of water and milk supply, and any other problems of sanitation.

How To Give Cod Liver Oil

Some authorities recommend that cod liver oil be given in the morning and at bedtime when the stomach is empty, while others prefer to give it after meals in order not to retard gastric secretion. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. It is most important that the mother administer the oil in a matter-of-fact manner, without apology or expression of sympathy.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silver-plated spoon (particularly if the plating is worn), a glass spoon has an advantage.

On account of its higher potency in Vitamins A and D, Mead's Cod Liver Oil Fortified With Percomorph Liver Oil may be given in one-third the ordinary cod liver oil dosage, and is particularly desirable in cases of fat intolerance.

ALWAYS DEPENDABLE PRODUCTS

Pharmaceuticals. . . . Tablets Lozenges, Ampoules, Capsules, Ointments, etc. Guaranteed reliable potency. Our products are laboratory controlled.

Zemmer

PRESCRIBE or DISPENSE ZEMMER

Write for catalog.

Chemists to the Medical Profession

THE ZEMMER COMPANY
Oakland Station, PITTSBURGH, PA.

OK-10-39

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Carcinoma of the Breast. End-Results: Massachusetts General Hospital 1930, 1931, and 1932. By Channing C. Simmons, M.D., F.A.C.S., Grantley W. Taylor, M.D., F.A.C.S., and Claude E. Welch, M.D., Boston Massachusetts. Surgery, Gynecology and Obstetrics, August 1939, Volume 69, Page 171.

This paper is the seventh in a series of reports on the end results of operation for carcinoma of the breast at the Massachusetts General Hospital. This paper covers the three year period 1930 to 1932. There was an operable rate of 80 per cent and this report is on 185 patients who had operations performed during this three year period.

"Five to eight year cures were obtained in 70 per cent of the cases in which disease was confined to the breast, in 31 per cent when the axillary nodes were involved, and in 45 per cent of the entire group." The end results were known in every case that was operated upon.

All of the breast tumors were graded pathologically and the results indicate that the pathological index of malignancy was of great significance in prognosis. Those classified as grade I showed cures in 86 per cent. Those classified as grade II showed cures in 51 per cent. Those classified as grade III showed cures in 31 per cent. By reviewing their record, these authors feel "the age of the patient is of prognostic importance only in so far as younger patients tend to present higher grades of malignancy and earlier metastasis to the axilla."

It is therefore felt that the most important basis for prognosis in a given patient lies in the extension of the disease and the pathological index of malignancy which is to say whether it is limited to the breast or whether it has extended to the axilla and whether pathological index is grade I, II, or III.

Their series shows that the clinical diagnosis of axillary lymph node involvement is highly fallible. Nearly half of the cases in which no nodes could be felt clinically, had axillary lymph node involvement. Incidentally, two-thirds of the entire group proved to have axillary lymph node involvement. Incidentally, two-thirds of the entire group proved to have axillary node involvement at the time of operation.

This difficulty in determining clinically the involvement of the lymph nodes in addition to the advisability of radical surgery in any type of malignancy, has led to the radical operation in all of these patients with removal of considerable subcutaneous fat, the breast, both pectoral muscles and the axillary contents. Reasonably large amounts of skin were excised but the wounds were able to be closed in practically all cases.

No preoperative X-ray was employed in this series and only a very few patients had postoperative X-ray.

The sites of recurrences are tabulated and the most common site is found to be lungs, although bone metastasis was nearly as frequent. Only 10 recurrences in the operative field were found.

They believe the improvement in curability in this series as compared with their previous series may be based upon standardization of radical operation and to better selection of patients. They feel that there may be some improvement due to shortening of preoperative duration of the disease as the result of educational programs but they cannot attribute any of the improvement in results to radiation therapy which was not employed.

They have established certain criteria for operability of carcinoma of the breast. "Carcinoma of the breast is operable when the disease is confined to the breast, or to the breast and axilla. The primary tumor must be movable in relation to the chest wall, and must not present extensive skin involvement, skin metastases, or the subepidermal infiltration known as 'inflammatory' carcinoma. The axillary nodes must be movable in relation to the chest wall and great vessels, and these nodes must be few in number. There must be no evidence of disease in the supra-clavicular areas or in the opposite axilla, nor of metastatic disease in the lungs, pleura, liver or skeleton. Patients in the last two series have had pre-operative X-ray studies to rule out the presence of skeletal and pulmonary metastases."

Even with this more careful selection of patients for operation and with their belief that many of the advanced patients are being sent directly to radiation institutions, the operability rate has still remained 80 per cent. This, together with the fact that the average duration of the disease before consultation has reduced to 2.8 months in the cases in which the disease was limited to the breast and to 5.3 months in the cases in which disease had extended to the axilla, lead these authors to believe that the educational programs of the past 13 years have been of distinct advantage in assisting their excellent results.

Comment: This is an excellent report showing splendid end results in a series where every patient had been followed. It is equally important that it represents a series which has been treated surgically only and offers good comparison with those series reported with combination radiation therapy. Preoperative radiation has not yet become fully established as offering advantages over the radical operation alone, and it is by comparison of series such as this one and those in which preoperative radiation has been employed that we may arrive at a correct conclusion.

It is also noteworthy that these authors have carefully selected their cases and established criteria for doing so and have employed almost the identical type of operation.

Wendell Long.

What is the Value of Appendicostomy in Grave Peritonitis of Appendicular Origin? (Que Vaut L'Appendicostomie Dans les Peritonites Graves d'origine Appendiculaire?) By Paul A. Poliquin, F.A.C.S., Chirurgien-adjoint a l'hopital Saint-Francois-d'Assise, Assistant-chirurgien a l'hopital Saint-Luc et a l'hopital de l'Enfant-Jesus (Quebec). L'Union Medicale du Canada, September, 1939; page 949.

The author directs attention to the fact that

surgeons have observed for a long time that in the case of perforation of the appendix with peritonitis there is an occasional patient who, after operation, develops a fecal fistula, and that in those cases developing a fecal fistula the patients have usually progressed in a very much more satisfactory way than those who did not develop a fistula.

From time to time surgeons have made practical application of this clinical observation by providing for drainage from the intestinal tract itself in the immediate neighborhood of the appendix at the time of operation. The author refers to this procedure as "primitive derivation," and he gives credit to Dr. W. E. B. Davis for formally advising it in a statement at a meeting of the Southern Surgical Association in 1890. The author quotes Dr. Davis as follows: "We are very rarely called before the third day after the rupture (apparently referring to perforation of the appendix). Before this time the patient has had all sorts of treatment, and is then sent to us for operation." This is a very free translation of the quotation in French by Dr. Poliquin, Poliquin's statement in French being as follows: "Nous sommes tres rarement appeles avant le troisieme jour de la rupture. Avant ce temps on a eu recours a toutes sortes de traitement, cest alors qu'on s'adresse a nous pour operer." The author quotes Davis to the effect that in such a situation he advised opening of the intestinal tract for the purpose of securing "primitive derivation." "Open the abdomen, incise the intestine, irrigate with warm water and make an artificial anus. This will relieve the patient of his distention and give him the best chance of recovery," is the statement attributed to Davis. In speaking of this statement by Davis in 1890, there is a reference to an article by Edgar P. Hogan, entitled "The Appendix Problem" appearing in the Annals of Surgery, May, 1937, page 815.

In 1895 Mixter established a technique in which a cecostomy was performed at the time of operation for appendicitis, followed by extensive peritonitis.

In 1910 C. B. Keetly of London recommended appendicostomy. The question was studied more completely by Patry in 1916. Statistics were reported by Jackson in 1917. This was followed by another report in 1920 by A. Caucci of Milan, these statistics being the first in connection with the procedure.

According to the author, appendicostomy as a treatment of appendiceal peritonitis has been the subject of many articles contributed by numerous surgeons in both the United States and Europe.

In connection with technique, the author advises as follows: "Place a purse-string suture around the base of the appendix, remove the appendix without ligating it, introduce into the cecum by way of the lumen of the stump of the appendix a No 16 Neladon catheter, the end of the catheter being cut off, taking care to pass the catheter through omentum; fixation of the catheter to the margin of the stump, followed by tying the purse-string suture, the stump of the appendix being inverted at the same time. In addition, the author advises two drainage tubes, one of them extending into the pelvis, and the other to the space on the outer side of the cecum. Close the abdomen, and fix the catheter to the skin so that it will not be displaced.

Comments: When one takes into consideration the inhibition of peristalsis in the presence of peritoneal inflammation, one can understand the value of a "vent" for the escape of gas and toxic liquid material from the intestinal tract. One understands, also, why intestinal incompetence (so-called "ileus," a term that has neither anatomical nor pathological foundation—is developed. "Ileus" is derived from a verb that means to twist. There is not, necessarily, any twisting in connection with so-called "adynamic ileus." The difficulty is due to the temporary reduction and disturbance of function of the intestinal musculature—hence, in our judgement, the appropriateness of the term "intestinal incompetence.")

Between 25 and 30 years ago we were impressed with the remarkable improvement immediately after the development of a fecal fistula following appendicectomy in the presence of spreading peritonitis. It was observed that nausea, vomiting, and abdominal distention, with pain, were relieved. About that time we inaugurated the treatment of appendiceal peritonitis that we have followed ever since — that is, nothing by mouth, morphin as necessary to keep the patient comfortable, the end of a colon tube introduced just well beyond the sphincter for the escape of gas, proctoclysis, large, moist, hot packs over the abdomen, to be changed frequently. At that time the chief difficulty was to give the patient as much water as he ought to have, together with sodium chloride. Some years later the parenteral administration of normal saline solution and of dextrose solution became feasible, and gradually, in our service, the administration of fluid per rectum has been discontinued as a routine measure.

While I was preparing to dictate the abstract of this article by Poliquin, Dr. Earl Garside, Chicago, came in to visit us. I spoke to him about the article by Poliquin, and then he told me that he and his associates had written an article on the conservative treatment of appendiceal peritonitis. The article is by A. T. Lundgren, Earl Garside, and William A. Boice, Augustana Hospital, Chicago, and was published in the June number of Surgery, page 813. It is a splendid review of the conservative management of appendiceal peritonitis, and in connection with it the authors speak of deliberate cecostomy, the technic indicating that a catheter is introduced into the cecum by way of the stump of the amputated appendix.

In the article by Poliquin, abstracted above, it is advised that about 100 c.c. of warm water or normal saline solution be instilled into the catheter entering the cecum about every two hours.

In addition to the performance of the appendicostomy, and its subsequent management, the author (Poliquin) advises the Fowler position with inclination to the right side, the parenteral administration of fluids if necessary.

Poliquin reports a series of 80 cases of grave peritonitis in which appendicostomies have been done. There were 63 recoveries and 17 deaths, being a mortality of 21.3 per cent.

We had not deliberately performed an appendicostomy at the time of operation, because we have been quite satisfied with the management that I have briefly indicated above. Finally, we believe that the management that we have indicated above is applicable in the average case of appendiceal peritonitis as a pre-operative procedure. It has been our experience that our plan of treatment is just as applicable before operation as it is after operation. Notwithstanding these statements, I regard the article by Dr. Poliquin as being a very valuable contribution.

LeRoy Long.

Conservative Myomectomy. By Professor Bernhard Zondek, Jerusalem, Palestine. Surgery, Gynecology and Obstetrics, August, 1939, Volume 69, Page 214.

Since he has been in Jerusalem, Zondek has performed 82 myoma operations. Of these, 67 were performed in women sexually mature up to an age of about 40. Of these 67, 40 were operated upon conservatively with the removal of the tumors by myomectomy and conservation of the uterus, 59.7 per cent of the 67 in the sexually mature age. He reports in the last 10 cases nine were operated upon conservatively.

"The size, the number, the site or even benign degenerative changes in the myoma do not contraindicate the use of conservative operative methods."

After his conservative operation conception took

place in seven patients in which the pregnancy as well as the parturition and puerperium were normal.

He states that he has been led to this extremely conservative treatment of fibroid tumors since going to Jerusalem because the women there are willing to take risk of recurrences in order to preserve menstruation and the possibility of conception.

In the direction of possible recurrences, it is not only interesting to know that he has had two cases but that Victor Bonney, of London, who uses the conservative operative method chiefly, reports that in many years he has had only 2.3 per cent of recurrences. Zondek emphasizes the fact that this operation can be only successful and recurrences reduced by removing every perceivable and palpable myomatous nodule.

Comment: One of the interesting features of this article is the change in the author's approach to the treatment of fibroid tumors since he has been located in Palestine, following a long period of practice in Germany. There is little question that the attitude of the patient has considerable bearing upon the choice of operative procedure for fibroid tumors where there is a distinct possibility of recurrence, and it is interesting to note that in different parts of the world fibroid tumors are treated more conservatively or more radically to a considerable degree dependent upon the wishes and the character of the people so treated.

Myomectomy is a valuable procedure and should probably be employed much more extensively than is at present the case. Though one would hardly endorse such a high percentage of myomectomies in the treatment of fibroid tumors, it may well be emphasized that myomectomy should be employed more frequently especially in younger women who have not had children or who have not been married. The technical difficulties are somewhat greater than hysterectomy but despite the additional technical burden and the slight additional mortality risk it is an extremely desirable procedure in many instances.

Wendell Long.

A Simple, Efficient Method to Diminish the Instances of Primary and Secondary Infection in Surgical Wounds. By Reginald H. Jackson and Reginald H. Jackson, Jr. Surgery, September, 1939, Page 398.

The authors felt that there was a potent source of direct infection in clinical wounds in addition to the following long recognized potential factors of infections of clinical wounds.

They enumerate the long recognized factors as (1) contact infection from defectively sterilized hands, gloves, instruments, skin in the field of operation, sutures, ligatures, dressings; (2) faulty hemostasis; (3) rough handling of tissues; (4) mass ligature necrosis; (5) excessive bulk of catgut in ligatures and sutures; (6) suturing which interferes with proper blood supply; (7) use of strong antiseptic solution with resulting necrosis or diminished functional repair ability of cells.

They felt that in addition to the above, long recognized, potential factors that there actually exists today in every operating room a most potent source of direct infection, one which strikes with a frequency and viciousness directly related to the following factors:

1. The number of human beings present in the operating room.

2. The frequency with which the room is used.

3. The time of year, the highest incidence of such clinical wound infection being coincident with high rate respiratory infection of humans.

4. That there are nearly always in the room carriers of staphylococcus aureaus or hemolytic streptococcus.

5. That the surgeon, himself, unwittingly may be the carrier.

6. That it is practically impossible to guard against droplet infections without the use of impossible face and nose masks.

7. That practically all operating rooms contain, in the air, and on the floor, walls and ceilings, more staphylococci and, at times, hemolytic streptococci, than any other department in the hospital except the nose and throat department.

8. That staphylococcus aureaus is the principal and general source of infection of clinical wounds.

9. That these infecting agents gain direct entrance to the wound by precipitation from the air overlying the wound and by droplet infection.

10. That every wound made by the surgeon is contaminated and potentially infected in direct proportion to its size and the length of time of its exposure.

11. That a run of such cases always means that the air in the room contains, as proved by culture, a higher percentage of these organisms than normally.

12. That the percentage of viable bacteria reaching the wound may be greatly diminished, almost to the vanishing point, through appreciable continuous special ultraviolet radiation of the air and field of operation, with a resultant marked percentage reduction in the incidence of infected wounds.

13. That while the average incidence of such baleful clinical wound infections is from four to six per cent (heretofore recognized as an irreducible minimum) it at times rises to 18 to 20 per cent.

14. That a scientific bacteriologic checkup on every link in the so-called aseptic chain may achieve a 100 per cent credit, and yet the incidence of clinical wound infections continue at two to three times the average.

They were primarily, before experimental work again, interested in the statement of Mason of Northwestern Medical School who emphasized that it is within the power of the surgeon to change a contaminated, traumatic wound into a surgically purified one which generally will heal per primam without the use of any antiseptic whatever, provided soap may be so classified.

The authors then reasoned that in as much as every operative wound is contaminated and potentially infected, why should they not cleanse it in the same way?

They set up their experiment on the basis of the following two questions:

1. Will the same thorough cleansing with soap and water used in accidental wounds militate in any way against ideal healing if applied to clinical surgical wounds before closing them?

2. In a clinical wound proved by culture to be contaminated, what percentage of success in debacterialization may be expected by cleansing with soap and water?

In their work they proved to themselves that (a) However clean and aseptic an operating room appears, wound infecting organisms are always present in the air and on the walls.

(b) Gentle scrubbing of a surgical wound with soap and water before closure does not militate in the slightest degree against ideal healing.

(c) In a surgical wound proved to be contaminated, soap cleansing will debacterialize it.

The method of preparation of the soap mixture used by the authors is given in detail. They also explain in detail their exact technique in scrubbing out the wound with this soap mixture.

Their conclusions are as follows:

1. The air of every operating room is practically always badly contaminated with staphylococci and streptococci. The incidence of primary wound infection with these organisms averages four to six per cent, but at times may be as high as 20 per cent.

2. Every surgical wound develops a sticky fibrinous nutrient film which catches and holds bacteria and dust as would flypaper.

3. The amount of contamination and potential source of wound infection is directly proportional to the size of the wound and the length of time the air exposure continues.

4. Mechanical cleansing with soap and water just before closure of wounds very efficiently and harmlessly removes this chance of primary wound infection with staphylococci, streptococci, etc.

5. The method they describe is said to actually aid in ideal wound repair as evidenced by the very high per cent of wounds healing with "complete placidity," no redness, induration, or irritation such as is often seen and noted in wounds which just manage to pass muster as healing per primam.

LeRoy D. Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Choroidal Angino-Sclerosis with Special Reference to its Hereditary Characters. Arnold Sorsby, London. The British Journal of Ophthalmology, July, 1939.

This is an original communication accompanied by numerous pictures of the fundus, colored and otherwise. A review of the literature is given quite completely. Aetiological considerations enumerated are as follows:

1. Age.—Most patients with choroidal sclerosis, no matter of what type, were elderly. But in some cases the history was of long duration, as in Harman's case; Bednarski's patient was aged 23 years and developed night blindness at eight years; Knapp's patient was aged 11 years.

2. Syphilis.—In a case of rather patchy distribution illustrated Oeller (b), and in one of Di Marzio's patients, syphilis appears to have been present. A syphilitic aetiology is suggested in another case of Oeller (a) (1899) and was assumed by Guglianetti for a case of generalized choroidal sclerosis.

3. Tuberculosis.—Pulmonary tuberculosis was assumed to be the cause in one of Di Marzio's cases.

4. Cardio-vascular disease.—Only in one case (Harman 2nd case) was there a definite heart lesion. Most reports speak of the patient's good health. Morton reported of his patient that seven years later the general condition had deteriorated and that there was albuminuria.

5. Familial Incidence.—Most case reports give a negative family history; a familial factor is suggested, but not conclusively, in four case histories.

6. From reporting cases there is no question but what there is a definite relationship between choroidal sclerosis and retinitis pigmentosa.

The summary of the literature shows:

1. It would appear that three clinical forms of choroidal sclerosis have been described.

(a) "Central senile areolar choroiditis." (Nettleship, Retze, Thompson). In this type a more or less regular oval area extends from the disc temporally and engulfs the macula.

(b) Peripapillary type (Haab, Harman, Cuperus, Guglianetti, Di Marzio, Pillat). Here the choroidal sclerosis radiates from the disc to a variable but considerable extent peripherally in all directions.

(c) Generalised sclerosis (Morton, Frost, Harman). In Morton's and Frost's cases the macula was spared allowing good central vision, with fields of a tubular type. In Harman's case the macula was engulfed.

2. Evidence of syphilis was present in four cases (Oeller, Frost, Guglianetti, Di Marzio); and of tuberculosis in one (Di Marzio). Otherwise the case reports were negative, except that remote consanguinity is noted by Knapp and a possible familial factor is suggested by Holloway and Fewell, by Cuperus, Guglianetti and by Wilmer. In practically all cases, those of Pollot and of Di Marzio excepted, the diagnosis of "atypical retinitis pigmentosa" could be ruled out.

(In this review the limited peripapillary choroidal sclerosis sometimes seen in myopia and the patchy secondary sclerosis following inflammatory lesions in the choroid have not been considered.)

There are case reports of familial choroidal sclerosis given.

Night blindness and undue contraction of the field was not a feature in any of the patients reported in the present study—clinically some cases of retinitis pigmentosa show considerable choroidal sclerosis with relatively little retinal involvement—the distinction between a peripapillary type and a central and peripapillary type of choroidal sclerosis has some justification—the nature of choroidal sclerosis requires elucidation—the present case reports establish its familial character and the fact that the lesion develops in adult life—presumably the choroidal circulation earlier in life was normal—in so far as the lesion appears to develop in post-natal life in fully differentiated tissue, and is of hereditary character, it may be regarded as belonging to the group of heredo-degenerations or abiotrophies."

Subconjunctival Injections of Neoprontosil in the Treatment of Ocular Infections. R. Townley Paton, M.D., New York. Archives of Ophthalmology, September, 1939.

In a detailed and comprehensive communication Paton gives the results obtained in the clinic of the Manhattan Eye, Ear, and Throat Hospital. Loe, Rychener, Lian, Kirk, McKelvie, Hussein and Thygeson have reported on sulfanilamide in treatment of trachoma and gonococcic infections of the eye. Newman, Perry, Willis, Goldenbury, L. J. and R. Fernandez have written on cases of gonococcic infections of the eye which have been cured with sulfanilimide or neoprontosil.

Loe has reported successful treatment of trachoma among the Sioux Indians with sulfanilimide. He gives ½ gr. of sulfanilimide per pound of body weight per day, in divided doses, with an equal amount of sodium bicarbonate. Gradle has also done some work with trachoma. Heinz is the only reference in regard to the use of subconjunctival injections of neoprontosil. Brav used 2.5 per cent solution of neoprontosil topically in corneal ulcerations with good results. In addition Glover used the oral administration with corneal ulcerations with equally good results.

In the discussion of toxic reactions we are reminded that there is no specific therapeutic test available to determine idiosyncrasies. It is recommended that small doses be given at first and then larger ones later with a hematologic follow-up. Where large numbers are dealt with daily in a clinic this follow-up is almost impossible, so the subconjunctival injections were inaugurated. Thus far no reactions have been observed.

In regard to dosage "the total amount required over the first 24 hours of treatment is calculated on the basis of one cc of a 2.5 per cent solution for each pound of body weight up to 120 pounds." The total daily amount is divided into six parts and given every four hours subcutaneously.

For the subconjunctival injections there is no available data but at the Manhattan Eye, Ear and Throat Hospital they give 0.3 to 0.5 cc. of a 2.5 per cent solution every two days for quite a number of doses without apparent injury to the surrounding tissues. The purpose of giving the neo-

prontosil in this manner was to give it in a safe way when there was no follow-up possible. It also gives a more concentrated effect at the site of the infection. Patients who cannot tolerate the drug by mouth may possibly take it better subconjunctivally. According to Loe, and with which the author agrees, this method in trachoma produces the following result:

"Improvement of objective symptoms included paling of the conjunctiva and paling of the trachomatous patches and flattening of the granules and follicles. The blood vessels of the conjunctiva become more visible on the fifth and sixth day of treatment and daily thereafter they become more normal."

The method of administration is first thorough anaesthesia with 0.5 per cent pontocaine hydrochloride. The first injection is 0.3 cc. neoprontosil in either the upper or lower cul-de-sac with a tuberculin syringe. There follows a stinging sensation which lasts about three minutes for which gentle massage is done. If there is much scar tissue numerous small injections may be used instead of the one of 0.3 cc. Iritis, scleritis and interstitial keratitis have responded well and shown good results. The author's own conclusions are as follows:

Neoprontosil when administered subconjunctivally in small doses has been well tolerated by the eye in the presence of certain severe intraocular and extraocular infections.

For ambulatory patients, especially clinical patients, for whom a daily blood count and determination of the hemoglobin and sulfanilamide concentration of the blood cannot be performed, the combined oral and subconjunctival injections lessen the danger of severe toxic effects.

Otogenic Meningitis. Terence Cawthorne, London. The Journal of Laryngology and Otology, August, 1939.

Since 1935 when Domagk introduced prontosil into the treatment of this disease, the author has collected records of 194 recoveries from otogenic bacterial meningitis. For 34 years previous to 1936, Gray was able to find records of only 27 recoveries of otogenic streptococcal meningitis. Neal, Jackson and Appelbaum in a report of 2,674 cases determined that 67 per cent occurred under the age of 10 years. In 623 cases these same men determined that the leading organism was pneumococcus, then streptococcus and in order B. Influenza and staphylococcus.

The method of spread of the infection is by one of the following routes: by the spaces already present naturally formed by injury, long standing disease or previous operation; along vascular channels; or by actual destruction of intervening bone. The author says: "Acute suppurative otitis media may cause meningitis within hours by spread through certain preformed spaces, within days by spread through veins, and within weeks by direct destruction of intervening bone."

The cerebrospinal fluid is likened to a mirror of meningeal behaviour. It shows the serous, cellular and bacterial stage in addition to giving other valuable information. The clinical features of this disease are discussed thoroughly under the stage of onset, the stage of established disease and the stage of paralysis. A cerebrospinal fluid is necessary for a definite diagnosis.

Under avoidable factors that the author in his own experience has found to lead to meningitis are mentioned and discusses premature surgery (wait until the second or third week to operate), incomplete surgery (all cells have not been completely exenerated and inadequate drainage), excessive surgery (accidental injury during operation). In addition there is the neglected aural suppuration, both acute and chronic as well as an acute upper respiratory infection (where nasal douches have spread the infection to the middle ear).

The treatment is discussed in order of importance according to the author's opinion. Sulphanilimide is of the most importance. The history of sulphanilimide is discussed. He says in regard to this treatment: "In dealing with a dangerous disease such as meningitis, the only justification for discontinuing the drug before the patient is cured would be the onset of a complication that might prove fatal unless the drug were stopped." The cerebrospinal fluid should be drained as often as necessary to keep the pressure normal. It may be done two or three times in the first 24 hours if necessary and about once daily thereafter until the pressure remains normal. The eradication of the primary focus should be undertaken with as little delay as possible. Anti-sera, vaccines and blood transfusions are also recommended. The general treatment consists of rest, suitable diet, alkalinazation with sodium bicarbonate and adequate conservative treatment of the ear (mopping and keeping clean). A table of cases are reported. A bibliography is appended.

Nasal Allergy in Children. E. J. Barnett, M.D., and H. D. Carnahan, M.D., Spokane, Washington. Archives of Otolaryngology, August, 1939.

"It is reported that 44 per cent of patients with chronic nasal complaints seen in routine otolaryngologic practice have nasal allergy." One of the most common complaints of the parents is that the child "has one cold in the nose after another." Some common symptoms are sneezing, sniffling, nasal itching, obstruction, and discharge. In between attacks the nose feels stuffy. Tonsillectomy and adenoidectomy are done ineffectually and the parents may say that the child even has more colds than before the operation or that the adenoids have recurred. The appearance of the nasal mucous membrane is characteristically pale and edematous; the secretion serous or mucoid. The presence of eosinophils in the smear is indicative of the allergic condition; a negative smear does not exclude allergy. If both eosinophils and neutrophils are present in large numbers, there is undoubtedly allergy plus an infection present. If neutrophils alone are present in the smear, then it is infection alone or an infection so severe that the allergy is overshadowed, in which case repeated smears must be made.

"In an allergic child hypersensitiveness to inhalents, contactants, pollens and foods is the rule. The child's allergy is rarely due to a single cause; multiple and mixed factors are involved. "Prophylactic measures include exclusion of pets from the house followed by a thorough cleaning, elimination of feather pollows or covered with cellophane slips, enclose the mattress with rubberized sheeting, a plain bare sleeping room — floors waxed—no dust, during the sweeping and dusting of the house the child should be kept out doors, avoid insecticides or sprays, use unscented soaps and nonallergic cosmetics, avoid the presence of smoke."

When the prophylactic measures do not give sufficient relief then it is advisable to carry out skin testing and hyposensitization. About 50 scratch tests are made with pollens, with all epidermal substances and with such foods as eggs, milk, wheat, chocolate, nuts and cottonseed. Then about 200 allergens are used to test intradermally. All foods that produce a reaction are removed from the diet. Hypersensitization of the offending allergens is also carried out. Foods are cautiously added to the diet from time to time to determine the tolerance.

This is a very worthwhile paper for both pediatrician and rhinologist. The author's conclusions are as follows:

1. Allergy should always be suspected as the cause of rhinitis in children.

2. Cytologic examinations of the nasal secretions with predominance of eosinophils offer confirmatory evidence.

3. Routine repeated cytologic examinations for all patients with chronic nasal symptoms are important.

4. Local treatment for nasal allergy must be conservative.

5. Disappointments in rhinologic practice often result from failure to recognize and relieve associated allergy.

6. Prophylactic allergic measures are often sufficient to give relief from nasal allergy.

7. Allergic testing and hyposensitization may be reserved for unrelieved or complicated conditions.

8. The importance of allergy to the rhinologist cannot be overemphasized.

PLASTIC SURGERY

Edited by
GEO. H. KIMBALL, M.D., F.A.C.S.
404 Medical Arts Building, Oklahoma City

Repair of Large Defects After Removal of Cancer of the Lips: Ernest M. Daland, M.D., F.A.C.S., Boston, Mass. S.G.&O., September, 1939.

The author calls attention to the fact that small carcinomas of the lip may be repaired by a "V" shaped incision. He states that this operation is not satisfactory for lesions over two centimeters in diameter since it makes the lip so narrow that secondary procedures may be necessary. He refers to a previous article by himself for a total restoration of the lower lip by using flaps from the nasolabial folds. This operation, he states, is unsatisfactory functionally because it is devoid of muscle and serves only as a dam for food and saliva but does give a fairly acceptable cosmetic appearance when total removal is necessary.

In this paper the discussion is confined to the problem of reconstruction when the removal of from one-third to two-thirds of the lip is necessary. Discussion of the muscular structure of the mouth is undertaken in which the author shows that the orbicularis oris is a muscle or group of muscles which is a sphincter, is therefore circular and forms the oral opening and commissures due to the lateral pull placed on this circular muscle from the other muscles of the face. He calls attention to the fact that the skin and mucous membrane have the same attachment in all portions of the lip and thus the commissure is formed by extra oral muscular pull and shows that in reconstruction operations the extra oral musculature may be detached and the commissures shifted. Thus in the reconstruction the shape of the mouth is not changed leaving a larger overhanging upper lip but that the entire opening is made smaller with reconstruction of the commissures.

The technique of the operation is one of a rectangular excision of the new growth including at least one centimeter of normal tissue and extends down to the fold between the lip and the chin. The corresponding mucous membrane is also removed, but it is not necessary to remove so much as is removed from the skin. The mucous membrane is separated from the muscle and skin for a distance of about two inches out on the cheek. Lateral incisions are made from the angle of the defect; the musculature is separated from the mucous membrane leaving as much fat as possible to insure nutrition, then the orbicularis oris is separated from the other muscles of the face. Closure is then made, using cat gut for the mucous membrane and deep structures, and black silk for the skin. Hemostasis is accomplished by packing and pressure.

The author states that the patient's appearance as the operation is finished is almost alarming, but within a few days rotation has been effected; commissures have reformed and that what is really accomplished is a narrowing of the entire mouth. He states that in none of his 23 cases has this been too small for functional results. The orbicularis oris is innervated by the facial nerve and because of the multiple origins of the fibers which make up the nerve, the cutting of a few fibers does not seem to interfere with the innervation. This was proved by the first patient in the series who could whistle normally a few days after the operation.

Treatment of the lymph nodes of the neck closely follows that of the other facial carcinomas in that glands which remain palpable after their reaction subsides are widely dissected. The results of the treatment as reported by this author are excellent.

In two tables he gives 23 cases, six of the upper lip and 17 of the lower lip which have been treated in this manner. He reports three, four year cures; six, three year cures; one, two year cure; and one cure, one year or less. There are four cases of recurrence in metastatic areas and three cases of local recurrence. Because of the short time that he has attempted this operation he draws no conclusion of permanent cure but his figures show that he has a fair percentage of temporary cures without recurrence at the site of the operation. His case histories show good percentage on his 23 cases and give a very interesting study of this condition.

Comment: The author here has reviewed an operation which is similar to some of the older works but does give a method of repairing large defects of the lips which is a one stage procedure and leaves a functioning os to the mouth which is not devoid of muscle in its circumference and is adequate. The cosmetic results of the operation as shown by pictures in the article are very good although there is a comparatively short follow up and a comparatively small series of cases.

As a curative operation this seems to be adequate when combined with lymphatic gland dissection in this series of cases.

Treatment and Management of Burn Cases. H. Jerry Lavender, M.D., Cincinnati, Ohio.

The author begins the article with a discussion of the eschar method of treating burns. He states that advocates of this method claim that it is a big factor in reducing shock, relieving pain, preventing loss of tissue and body fluids, helping to minimize the toxic stage, controlling sepsis, and speeding recovery. But without exception these men emphasize treatment for shock and relief of pain. Quote: "It would appear then, that the crust-forming method affords the patient a protective or leathery coat in the burned areas, but that the fluid loss, pain, toxemia and sepsis have to be met with other measures to enhance restitution and recovery."

He calls attention to the difference between scalds and burns produced by fire, stating that he believes that fire burns are much deeper than scald burns and that the depth of burned tissue must of necessity play a large part in the recovery from the burn. He points out that where there is burned tissue that the tissue which is dead must slough, separate and be removed before healing takes place. He also feels that escharing only forms a coat over the burned tissue and for this reason cannot coagulate the entire depth of the burned tissue, therefore does not prevent toxic absorption but merely acts as a coagulum to seal the toxic materials and pyogenic organism. He further states that most fluid loss is controlled by coagulation in a very few hours after a burn.

The first treatment is for shock by common methods of relief of pain, restoration of body fluids, blood transfusions and stimulating drugs.

The local burn is not treated for from 10 to 12 hours, the patient in the meantime being wrapped in a sterile sheet. Treatment is to place patient in a warm bath which contains about a pint of

aqueous solution of green soap, allowed to soak for a few minutes and then removed from the bath. The time of the bath is increased as the patient's condition permits until it reaches one hour daily. The advantage claimed for such a method of treatment is that the burned tissues are removed more rapidly and with less harm to the patient and that the toxic materials are removed as they are formed. The contractures are less apt to develop and are recognized earlier and that the granulating beds are prepared for skin grafting at an earlier stage.

Comment: This article is a plea for a modification of the eschar treatment of burns in that many deep burns do not seem to be practically treated by escharring since the eschar does not reach to the depth of the burn. This fact has been previously observed in several cases and it is usually necessary in these cases to remove the eschar with the slough at an early date. Personal experience in the treatment of burns by daily bathing has been gratifying where the condition in the bath tub can be well controlled and the burned areas not contaminated from the tub.

Separation of slough is effected somewhat earlier by bathing patient in the tub and in most instances is very acceptable to the patient. Release of contractures has been noted in this manner and an early preparation of the area for skin grafting is probably effected although we do feel that the eschar treatment has a place in a good many instances because of its simplicity.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
717 North Robinson Street, Oklahoma City

"The Treatment of Volkmann's Ischemic Contracture," Henry W. Meyerding and Frank H. Krusen, Annals of Surg., Vol. 110, No. 3, September, 1939.

Volkmann's ischemic contracture consists of a contraction and fibrosis of the flexor muscles of the forearm and produces flexion deformity of the wrist and fingers. A partial permanent disability is always produced once it is definitely established.

It occurs most frequently in children as a result of injury to the lower humerus.

The authors consider physical therapy to be the most valuable single method of treatment. Surgery alone is entirely without value.

Causes of the contracture are described as being due particularly to hemorrhage, pressure on blood vessels and injury to the nerves in the ante-cubital fossa.

It is advised that to treat such fracture of the lower humerus early may result in a contracture, and in some cases it is advisable to defer reduction of the fracture for several days. The arm should be elevated in bed or in an airplane splint. Division of the fascia and drainage of the hematoma may be necessary.

Physical therapy methods of correcting this severe deformity consists of stretching with proper splinting, heat, massage and proper manipulation. Usually the fingers are first corrected; pulled into complete extension. Later the wrist is straightened again by similar splinting. Occasionally Banjo type splints are of distinct value in loosening the joints of the fingers, thumb and wrist. Old cases occasionally require plastic procedures on the contracted joints, but this is not the rule.

Following correction of the position, circulation usually improves. Splinting is then augmented by radiant heat, contrasting baths and general massage and occasionally electric stimulation of the muscles. Splints are worn at intervals between treatments. The whirl-pool bath seems to offer the best method of administering heat.

WELCOME to MEMPHIS to the outstanding medical meeting of the year—the annual meeting of the **Southern Medical Association, November 21-24.** In the nine general clinical sessions, the nineteen sections, the three independent medical societies meeting conjointly and the scientific and technical exhibits, every phase of medicine and surgery will be covered **—the last word in modern, practical, scientific medicine and surgery.** Addresses and papers will be given by distinguished physicians not only from the South but from all over the United States.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Memphis a program to challenge that interest and make it worth-while for him to attend.

ALL MEMBERS of State and County medical societies in the South are cordially invited to attend. And all members of state and county medical societies in the South **should be and can be** members of the Southern Medical Association. The annual dues of $4.00 include the Southern Medical Journal—**the equal of any, better than many.**

SOUTHERN MEDICAL ASSOCIATION
Empire Building
BIRMINGHAM, ALABAMA

Manual manipulations are occasionally of great value after correction has been obtained sufficiently with mechanical splints. Active exercise is the final curative measure and occupational therapy is brought into use here; using the hand loom, weaving, basketry, block printing and occasionally a large floor loom.

To the abstractor the most important thing about Volkmann's contracture is its prevention. With proper care there should be practically no cases ever develop. Once it has developed, the proper follow-up care as described by the authors is then certainly necessary to reduce the existing disability.

"Local Implantation of Sulfanilamide in Compound Fractures," N. K. Jensen, Luverne W. Johnsrud, and M. C. Nelson, Surgery: 6:1-2 (July) 1939.

The authors have used sulfanilamide locally in some 39 compound fractures. They first debride the wound carefully, as is now customary in all well managed institutions, with saline irrigations. They feel that primary closure of the wound without tension is indicated.

Sulfanilamide has been used in amounts up to 20 grams; being instilled directly into the wound after thorough debridement.

It appears that the only definite advantage this offers over the usual method of treatment of compound wounds by thorough cleansing and removing devitalized tissue is that the local instillation of the sulfanilamide apparently holds any remaining organisms in check so that the local defense mechanism can become organized.

It goes without saying that the fracture should be reduced and held rigidly immobilized during healing of the skin as well as the fracture.

The authors report 39 fractures and two compound dislocations healing without a single instance of primary infection. Previous series of 94 cases show 27 per cent infection.

Sulfanilamide in these wounds does not protect against gas gangrene.

Comment by abstractor: We have certain rather fixed ideas by primary suture of compound fractures. We have obtained many successful and safe closures by thorough debridement and scrubbing, but have had no experience with instillation of sulfanilamide. This appears to offer a hope of improvement in the treatment of compound fractures, but it is not to be advised as a routine measure until further research has been done on this subject.

CARDIOLOGY

Edited by F. Redding Hood, M.D.
1200 N. Walker St., Oklahoma City

Outline of Lecture on "The Treatment of Congestive Heart Failure" by Dr. Samuel A. Levine, Given before Post-Graduate Class in Cardiology, Harvard Medical School.

The treatment of congestive failure is the treatment of an incurable condition, i.e., a progressive disease with an inevitable end. The aim is to prolong life.

Rest In Bed—This will save about 25,000 beats in each 24 hours and above all make the patient comfortable for to be in bed without comfort is not rest.

Sleep—Sleep is important since a sleepless night produces a restless day. Use sedatives, the smallest amount necessary, using bromides, barbitols, codeine, or morphine as needed.

Digitalis—Digitalis is the most important and potent drug in congestive failure regardless of the rhythm. It has been found better to use pills or capsules since the liquid preparations may vary greatly as to the drops in 15 M. and there is no way to know exactly how much of the drug the patient has taken. A digitalis preparation that won't produce nausea is of no therapeutic value.

In a patient who has not had digitalis before will require about 1.5 gr. per 10 pounds body weight given over several days time. It can be given in one dose for digitalization in eight to 12 hours. The difficulty is that different people will require different amounts. A general method, there can be no set rule, is to give ¼ of the estimated amount the first day and repeating it the second day. The third day reducing the amount to about 1/6 of the estimated total and judging from the condition of the patient the balance of treatment. We may follow the effect in auricular fibrilation by using the apical pulse, the optimum being 60-70. In a regular rhythm slowing is not indicative of the effect. The aim of treatment is to arrive at a maintainance dose probably about 1.5 gr. daily.

When a patient comes in with a history of having had digitalis and with failure so marked that large doses are indicated the above rule may be used but if not marked then start with 1.5 gr. T.I.D. and watch for results.

A patient may need digitalis and still be vomiting, if due to liver pathology as a result of the failure, then digitalis is not contra-indicated. If it can not be taken by mouth, then give it per rectum for a day or two, the dose being the same as per mouth. Give the daily ration in one dose.

Signs for omiting or lessening the dose: (1) When the desired results are obtained (like to have the apical rate in auricular fibrilation down to 60-70) (50 to 60 is better). (2) Signs of toxicity—subjective signs being nausea, anorexia, sick feeling, vomiting, or yellow-green vision. Or the objective signs of extrasystoles, coupling, or heart block in any degree. If a patient does not show subjective symptoms but has any of the objective signs except complete heart block no harm has been done, but it shows that digitalis cannot be pushed.

In treating auricular fibrilation with digitalis and a regular rhythm develops the possibilities are that there has been a return to normal rhythm or that complete heart block has set in. Any time under these conditions the heart becomes regular stop digitalis as it is either not needed or is dangerous.

Digitalis is not indicated for rapid rates per se.

The question of the use of digitalis in pneumonia has long been debated but digitalis is useless in the presence of fever except in the presence of auricular fibrilation or failure. Pneumonias with a compensatory hypertrophy of the heart will do better while digitalis makes for a small heart by increasing the tonus at the same time tends to diminish the output.

Diuretics—These are better given after digitalization and in acites will work better after tapping. The increased abdominal pressure bringing pressure on the renal vessels probably account for the failure in marked acites. Mercuric diuretics should be used cautiously and be preceded by digitalization and acidulation with ammonium chloride, then giving it intravenously in the morning so that the effect will occur during the day. Undesirable effects may occur in the presence of renal edema or from re-digitalization as the fluids contain digitalis that must again pass through the blood stream.

Phlebotomy has a place in cardiac failure when there is venous congestion, enlarged liver, or pulmonary edema due to hypertension. It should be done quickly to give the right side of the heart a chance to regain its tone.

INTERNAL MEDICINE

Edited by Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

"A Critical Consideration of the Value of Postmortem Examinations." M. A. Blankenhorn, M.D., Cincinnati. (Abstracted from Hospitals, Vol. 12, April, 1938.)

"To consider the value of the autopsy to medicine is a waste of breath or of printer's ink if the consideration is to be what the autopsy has done for medicine. It is common knowledge, even to those outside of medicine, that the entire structure of medical practice is built on facts learned from the dissection of the dead."

"At times and in certain isolated medical problems, one might question the wisdom of studying the dead rather than the living. This question is expressed in the old contention as to whether the study of form outranks in importance the study of function; and also, specifically in medical science, as to the relative importance of pathology and physiology. Regardless of these contentions, medical history is clear in that the modern procedures of practice are founded on anatomy (normal and morbid) and on physiology."

"In the first instance, the autopsy is done to check the soundness of any particular medical procedure. In the second, the autopsy is performed to advance medical knowledge. When the autopsy is done at the request of the attending physician, in most instances it is expected to accomplish both these ends. Now one may suggest, for argument, that the autopsy no longer is able to advance knowledge because of its limitations and that modern methods of diagnosis no longer require the checking process of the autopsy. Whether the ends are desirable is beyond criticism at this particular moment; but whether the autopsy actually gains these ends is the object of this study."

"Does the autopsy advance medical knowledge? The ink-wasting part of this question has to do with the autopsy of the past. There can be no denial of the debt medicine owes to those whose bodies were dissected and to the dissector. But now in our present state of knowledge, is dissection outmoded because all mysteries are laid bare, and is there nothing more to learn? Certainly no understanding person claims that to be the case. Also we may ask, is the autopsy outmoded because it is supplanted by less gruesome methods to gain the same ends? To advance this claim, one must say that our instruments of precision applied with high skill can explain all the hidden manifestations of disease that lie beneath the surface. As one who has devoted much time in applying these methods for many years, I make no such claim, nor do I know of any sound-minded person who does. After all, there are few methods that are truly precise and there are very few infallible (pathognomonic) signs of disease."

"This uncertainty which dogs the steps of the bedside doctor is overcome by faith and confidence that within the limitation of his art the practitioner does his best. But this best, at its best, is not scientifically exact. There is always the modest apology by which all bedside facts are qualified by referring to them as "clinical." That is, that these facts are limited in their value because other information is wanted which only the autopsy can supply."

"It is no doubt true that the autopsy as done on man now gives less to the advancement of medicine than it did formerly, but that is not because there is no progress to be made. In the so-called degenerative diseases (as Bright's disease of the kidneys; diabetes; coronary, renal and cerebral sclerosis) as well as other less common phases of poorly understood conditions that resemble aging processes, more autopsies in the early stages must be done before one can say that the autopsy can not advance the frontiers of medical knowledge. Formerly, that is before the days of functional testing of the living, the early stages of these diseases could not be recognized. The disease of "degeneration," both clinically and pathologically, was seen only in severe form. The clinician found only the end stages; and since the patients did not die in early stages, the pathologist failed to see their beginning. Now with functional testing to make a clinical diagnosis and the zeal to "autopsy" all deaths, especially those so-called accidental and unrelated deaths, the early stages may thus be seen in serial form in a manner now unknown."

"It is by no means fair in this criticism of the value of the autopsy to assume that the autopsy as now done is perfect, for such is by no means true. On rare occasions the autopsy when thoroughly done finds no cause for death whatsoever; in fact, it discloses a state of bodily perfection consistent with life and vigorous health. This may be the case in status thymolymphaticus or in status epilepticus. Or the autopsy may disclose a disease, or a condition not fairly called a disease, for which no reasonable explanation is at hand (as, for example, idiopathic enlargement of the heart, or congenital cystic disease of the kidneys). The whole category of congenital malformations is unexplored as to cause—and they are important diseases, even in adults."

"In most of the audits that have been made of the accuracy of clinical diagnosis, usually the best or better examples of medical practice are chosen, as in Karsner's 600 cases and in those of Wilson. Both these examples were in circumstances where the effect of a high percentage of autopsied deaths is felt. Even in such conditions Wilson says that in the three principal causes of death, namely, cancer, tuberculosis, and heart disease, the percentage of correctness is about 75, 50 and 40 per cent, respectively."

"In practice, generally considered, of all reported deaths that comprise our vital statistics, there is about one in 100 checked by autopsy. In medical teaching centers some hospitals manage to do as high as 80 per cent autopsy and even higher on all deaths. Seventy-five per cent is regarded as a very good percentage; and hospitals approved for internship must do a certain total number to guarantee the atmosphere necessary to an excellence of practice that will be profitable to a beginner. Sir Henry Christian in 1926 advised that the 'best single index of selection' of a hospital for intern-

MUSKOGEE ARTIFICIAL LIMB AND APPLIANCE CO
G. LANGE, Mgr.
MEMORIAL STATION MUSKOGEE, OKLAHOMA
WE ALSO MANUFACTURE
BRACES, SPLINTS, FRACTURE FRAMES, FOOT ARCHES, SHOE EXTENSIONS, CELLULOID BODY JACKETS, TRUSSES, ABDOMINAL BELTS.
G. Lange Suspension Frame

ship is the autopsy percentage, 25 per cent of 100 deaths being desirable."

"All things considered, it would be utterly futile to discuss further the idea that medical research, medical practice, or medical teaching has reached a stage that can even be maintained, much less progress, without the continued practice of post-mortem examinations."

Comment: This is an abstract of one of a series of articles written and recently published in the Hospitals. All of these are extremely interesting and worth reading.

UROLOGY

Edited by D. W. Branham, M.D.
514 Medical Arts Building, Oklahoma City

Retention of Urine and Residual Urine in Post-Operative and Postpartum Cases, Use of Catheter In. Thomas D. Moore, M.D. Urologists' Correspondence Club, August 28, 1939.

Urologists frequently are called in consultation in cases of so-called pyelitis, occurring following various surgical procedures and childbirth. Usually such patients have required catheterization and our confreres among the general surgeons and obstetricians are disposed to blame the use of the catheter for the urinary infection. Some years ago Curtis called attention to the common occurrence of residual urine in cases where there had been acute retention with apparent restoration of vesical function. In other words, when the act of voiding is resumed, it is inefficient and the bladder does not empty completely. He further demonstrated that the routine use of a catheter at least every 24 hours, until residual urine disappears, is a protective measure and that very few patients will develop a urinary infection if this precaution is taken. It is generally known that urinary stasis is fertile soil for infection and it seems that the bladder is primarily involved in these cases and that renal infection, characterized by repeated rigors and fever, appears later, probably by the ascending route.

In the routine testing for residual urine of patients who have undergone an operation, as well as postpartum cases, it has not been uncommon to find from 10 to 20 ounces of residual urine, although the patient may have passed eight to 10 ounces immediately before the catheterization. One of my obstetrician friends, Dr. Walter A. Ruch, recently has tested for residual urine 65 consecutive delivery cases who required catheterization for postpartum retention, and found that 58 (90 per cent) had residual urine in varying amounts on the third postpartum day; in 39 cases (60 per cent) there was from four to 50 ounces. Since he has adopted the precaution of daily catheterization of these cases until no residual urine is found, instances of so-called postpartum pyelitis and cystitis are practically unknown. Thus it may be seen that it is not the use of the catheter in such cases that brings about the trouble, but rather its non-use, and that the great fear of employing catheterization, so prevalent among general surgeons, is really ill founded. It behooves urologists to reeducate those in the profession who still cling to the idea that a catheter is a dangerous instrument and to teach them that its routine use for the drainage of residual urine will prove it to be not an object of fear, but a trustworthy friend.

Comment: Because urinary tract infections contribute too much of the morbidity of surgery it is well for every surgeon to digest the facts herein presented by Dr. Moore. An appreciation of the factors responsible for such infections together with appropriate treatment will make the post-operative course of many patients smoother.

Urethral Caruncle With Particular Reference to the Sessile Type. Philips J. Carter, M.D., F.A.C.S., New Orleans, Louisiana. The Urologic and Cutaneous Review, September, 1939.

An excellent essay on this most common and distressful ailment of women. Because they are persistent growths that tend to recur, the ordinary mode of treatment; local fulgeration, cauterization, etc., are frequently followed by recurrences. The author feels that his therapeutic results have improved since he has performed surgical removal of the growth in toto together with its base of normal urethral tissue.

Combination of Treatments Effective In Peritonitis Morphine, Decompression of Duodenum, Use Of Fluids and Blood Transfusion Cut Death Rate Two-Thirds

Widespread peritonitis (inflammation of the membrane lining the abdominal wall), a dire complication often following perforation of the appendix, is best combated, and its mortality rate is reduced by two-thirds, through the intelligent use of morphine, fluids administered under the skin or by vein, decompression of the duodenum (the intestine adjoining the stomach) and blood transfusion, Thew Wright, M.D., A. H. Aaron, M.D., J. S. Regan, M.D., and Elmer Milch, M.D., Buffalo, declare in The Journal of the American Medical Association for September 30.

The authors believe that the death of patients with this complication is primarily due to two factors: shock and intestinal obstruction. They do not operate on any such patient until shock, abdominal distention and the diminished water balance of the body are combated.

By using the above four factors of treatment and then operating on 60 cases of diffuse peritonitis caused by a perforated appendix, the Buffalo physicians reduced their average mortality rate to 11.7 per cent, as compared with the United States average of 33 per cent and their former hospital rate of 45.4 per cent.

The days of life of the patients who finally died were thus lengthened to an average of 13.8 days instead of the usual three or four days. Therefore this combined preparatory treatment, by prolonging the life of a patient with peritonitis, provides the time necessary to increase the body's protective mechanism, a vital factor in recovery.

The patient with diffuse peritonitis on the fourth or fifth day of illness has blue lips and finger nails, falling blood pressure and increased respiratory rate. These are manifestations of the large amount of blood stagnated in the abdominal vessels and not available for surface circulation. The rise in the pulse rate is a compensatory effort of the heart to bring the blood, which it is receiving in a markedly diminished amount, to the tissues of the body.

By means of continuous duodenal decompression, gas and fluid are removed from the stomach and intestine, and the high elevation of the diaphragm, with the consequent compression of the overlying lungs, is partially overcome. This removes a contributory factor in the production of a terminal pneumonia. In addition, the effects of a high intestinal obstruction are decreased.

All one can possibly hope to do with the administration of fluids is to meet the increased metabolic needs and endeavor to keep the patient as nearly as possible in a normal water balance.

By the use of morphine, pain is relieved and the patient is kept quiet. If the drug is administered properly after several large initial doses at comparatively short intervals, the patient may get along without any morphine for from six to eight hours.

Transfusion increases the volume of circulating blood, attempts to restore the blood pressure, and supplies blood to the exterior tissues.

Riboflavin Added to Squibb Vitamin Line

Riboflavin (vitamin B2 or G) is now being supplied by E. R. Squibb & Sons, New York, in synthetic form for oral use in capsules containing one milligram, or approximately 400 Bourquin-Sherman units each. The capsules are packaged in bottles of 25.

Necessary for animal growth, a deficiency causing loss of hair, dermatitis and sometimes cataract in rats; in humans a lack of which has been reported to cause a chapped condition of the lips (cheilosis), a contributing factor in the development of pellagra, Riboflavin is said to be "a component of an oxidation enzyme" which performs a ver yvital function in the body of every animal—that is, it takes an active part in tissue respiration.

Riboflavin was isolated some time ago in pure crystalline form from liver, yeast and milk. It appears in the dry state as a yellow, water-soluble powder, very stable to heat and oxygen but rather unstable to exposure to direct light. Because of the cost of separating it from its environment, Riboflavin produced from natural sources is rather costly. The synthetic product, such as now being marketed by Squibb, is much less expensive.

The average daily requirement of Riboflavin for an adult is estimated to be from two to three milligrams or more, as prescribed by a physician. Riboflavin Squibb is biologically standardized, assayed by the Bourquin-Sherman method.

Operating Risk In Heart Disease Not So Great As Many Believe

That the operating risk for those who have a severe heart disease is not as great as many people think, is indicated in a report by Harold J. Brumm, M.D., and Fredrick A. Willius, M.D., Rochester, Minn., in The Journal of the American Medical Association for June 10.

Reporting on a study of the surgical risks in patients with heart disease, the two Rochester men say they found a death rate of only 4.3 per cent among 257 persons with severe heart disease who underwent imperative major operations.

Pointing out that they believe the mortality in the group of cases studied was remarkably low, the authors say this should encourage the sufferers from heart disease when surgical intervention is necessary.

"However, it must not instil false optimism into the clinician or the surgeon," they warn, "for he must realize that this accomplishment is not of casual origin but one resulting from the coordination of careful preoperative study and judicious selection, expert administration of anesthetic agents and skilful surgical technic and judgment. Operation must be confined to those cases presenting unmistakable indications.

"Likewise, gentleness in the manipulation of organs and tissues lessens the dangers of surgical shock, which in itself may tilt the balance away from recovery in these patients. Of paramount importance is the surgeon's determination to limit the operation to the procedure planned in advance and to avoid undertaking additional operative steps that might be indicated in the patient without heart disease."

Bacon Not Recommended For Infants

There is no rational basis for the common practice of giving bacon to babies, the October issue of Hygeia, The Health Magazine declares.

The practice apparently originated from the belief that the fat contained in bacon carried with it some valuable nutritional element. Since it is now known that the vitamin content of bacon is practically negligible, there is no obvious reason why bacon should be given.

A CONVENIENT OFFICE TREATMENT FOR TRICHOMONAS VAGINITIS

SILVER PICRATE
Wyeth

THIS simple treatment requires but two office visits, a week apart, for insufflations and the nightly insertion of a Silver Picrate suppository for twelve nights.

Complete remission of symptoms and removal of the trichomonad from the vaginal smear usually is effected following the Silver Picrate treatment for trichomonas vaginitis.

Complete information on request

JOHN WYETH & BROTHER, INCORPORATED, Philadelphia, Pa.

A.M.A. Journal Refutes Charges of Unnecessary Surgery

"Much of the propaganda devoted to breaking down public confidence in the American medical profession in recent years has been devoted to an attack on the medical profession because of fee splitting and because of the performance of unnecessary surgical operations," an editorial on "Unnecessary Surgery" in The Journal of the American Medical Association for September 30 says.

"Obviously, this kind of propaganda is never supported by actual facts or figures but is largely devoted to what has come to be called 'a smearing campaign.' In contrast is a report recently made available of surgery performed in a Brooklyn hospital. According to figures supplied by Dr. S. S. Goldwater, major surgical operations were performed in that hospital on 979 patients, exclusive of bones and joints, and fractures and other lesions of bones and joints were treated to the number of 788. At the same time in this institution 68 patients with possible surgical conditions were treated conservatively without operation, and 117 patients who came into the hospital with surgical diagnoses were not operated on because further study failed to confirm the diagnosis.

"The Journal ventures to say that this type of figures would be duplicated in the vast majority of hospitals in this country and particularly in those institutions approved by the Council on Medical Education and Hospitals of the American Medical Association as institutions suitable for the training of interns."

Rabbit Serum Valuable In Pneumonia

A reduction of almost 25 per cent in the pneumonia mortality rate, with a minimum of serum reaction or sickness, by the use of specific concentrated rabbit serum is reported by Italo F. Volini, M.D., and Robert O. Levitt, M.D., Chicago, in The Journal of the American Medical Association for September 30.

The mortality in their 153 pneumonia patients who were treated with the serum was 9.8 per cent as compared to 38.4 per cent in 164 patients not given serum.

The authors state: "Sensitivity to rabbit serum is rarely encountered. It is remarkably free from immediate reactions and produces fever in a relatively small percentage of patients. Delayed serum reactions are also infrequent. Serum lends itself to the concentrated single total dose administration, which procedure saves much time and probably enhances its curative efficiency."

Potassium Chloride For Allergy

When potassium chloride, alone or in conjunction with insulin, was given allergic patients with acute and chronic urticaria (severe hives) and bronchial asthma, definite relief occurred, Howard A. Rusk, M.D., T. E. Weichselbaum, Ph.D., Michael Somogyi, Ph.D., and Ernest Simms, St. Louis, report in The Journal of the American Medical Association for June 10. These patients showed a high increase of potassium in the blood serum during an attack.

The authors assumed that the increased blood potassium indicated a depletion of the normal potassium of the tissue cells. They were of the opinion that any substance that would decrease the blood potassium would drive the potassium back to the cells and thereby reestablish a state of balance. They found this true in that the patients were relieved when given insulin and potassium salts.

With further studies, now under way, the authors hope to determine criteria for selection of patients.

Proper Canning Will Help Retain Much Vitamin C In Fruit Juices

Commercially canned fruit juices retain considerable quantities of vitamin C when proper precautions are taken during the canning process, the July issue of Hygeia, The Health Magazine states.

The conservation of vitamin C is generally accomplished by raising the temperature of the juice rapidly, in order to drive out dissolved air and to destroy the "oxidase," which destroye vitamin C. Further conservation of vitamin C is made possible by performing the canning operations under reduced pressure or in an atmosphere of steam.

Citrus fruit juices are acid in reaction, and it has been found that vitamin C activity is retained much better in such a medium than in a neutral or alkaline medium.

Index to Advertisers

Balyeat-Bowen Hay Fever and Asthma Clinic iii
Beverly Hills Sanitarium v
Bone and Joint Hospital (McBride Clinic) v

Caviness Surgical Company vii
Classified Ads xviii
Coca-Cola viii
Cook County Graduate School of Medicine vi

Duke Sanitarium ..... Inside Back Cover

Eli Lilly and Company xiv

First Texas Chemical Mfg. Co. xiii

Goldfain Rheumatism-Arthritis Research Laboratory iii
Grandview Sanitarium xxi

Insured Investors xix

Lain-Eastland Clinic xii
Lederle Laboratories ix
Luzier's, Inc. x

Mead Johnson & Company ..... Back Cover
Medical Arts Laboratory ..... Inside Front Cover
Dr. Moody's Sanitarium vi
Muskogee Artificial Limb Co. 395

Nestle's Milk Products, Inc. 385
Neurological Hospital vii

Oakwood Sanitarium xii
Oklahoma City Clinical Society ..... Front Cover

Parke, Davis & Co. xxvi
Pearson School iv
Petrolager Laboratories, Inc. xv
Physicians Casualty Association—Health Association vi
Physicians Directory ..... xx-xxii-xxiii-xxiv-xxv
Polyclinic Hospital xxi

Ralph Sanitarium vii

S.M.A. Corporation xvii
Southern Medical Association 393
Springer Clinic vi

Terrell's Laboratories ..... Front Cover
Timberlawn Sanitarium viii
Trowbridge Training School iv
Tulane University—School of Medicine iv
Tulsa Medical Distributors xix

Upjohn Company, The xi

Von Wedel Clinic ..... Inside Back Cover

Woodcroft Hospital xxi

John Wyeth & Brother 397

Zemmer Company 386